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WORSSAM'S TIMBER SAWING FRAME.

Figure 1.

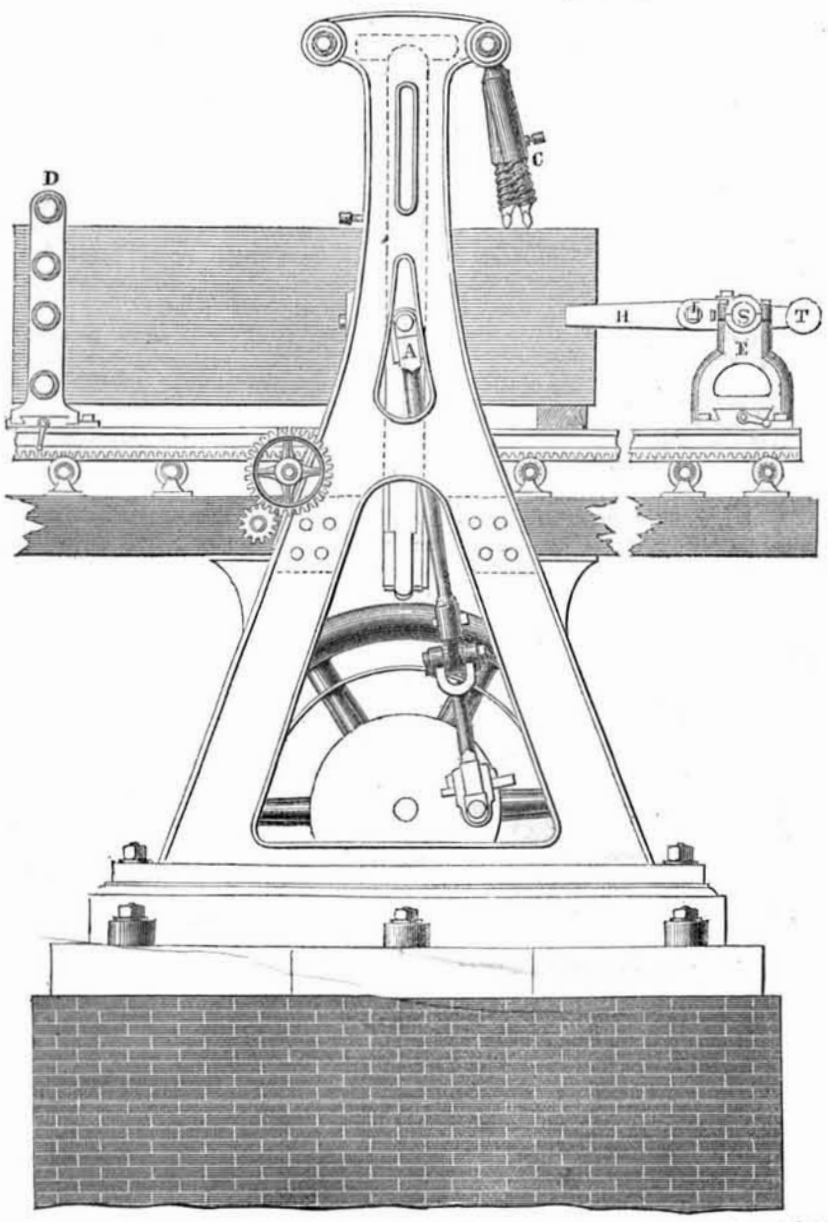
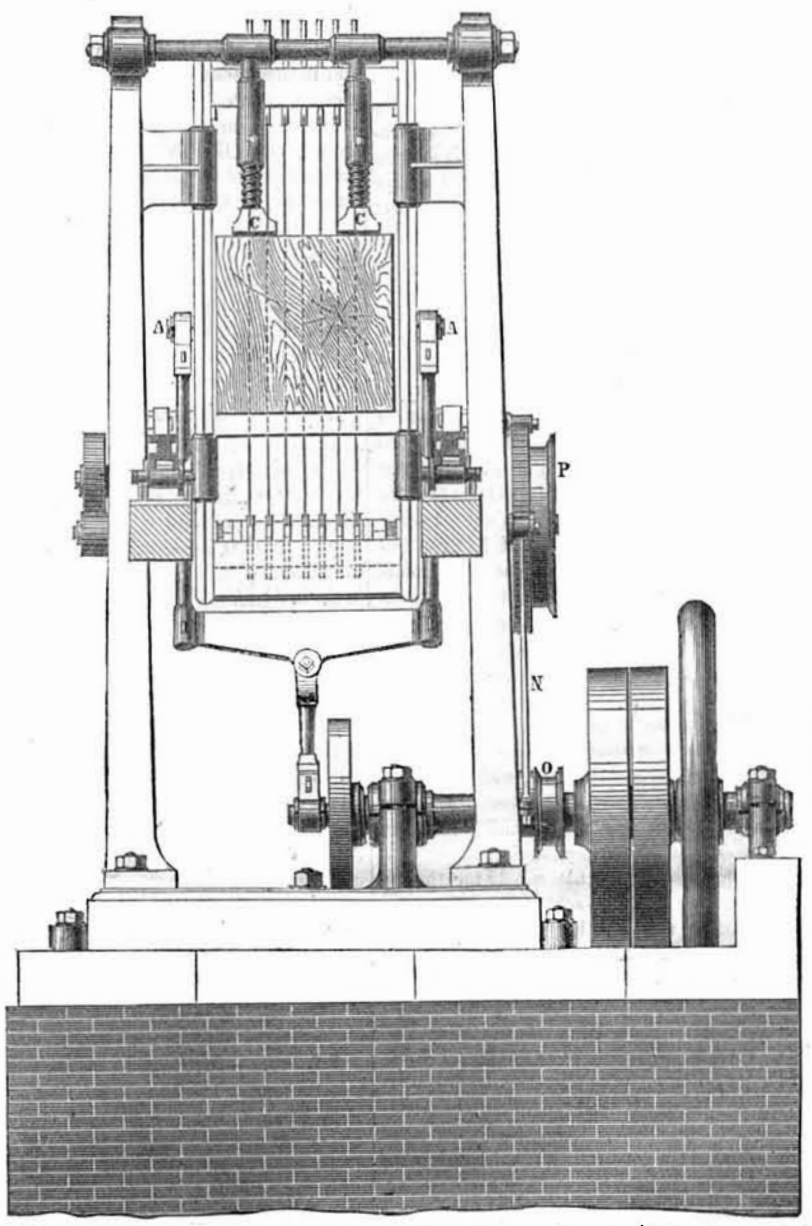


Figure 2.



The annexed engravings are a side elevation (figure 1) and a transverse elevation (figure 2) of a timber sawing frame, constructed by Messrs. Worssam & Co., engineers, of London. We have selected this from the London Artisan, knowing that a great number of our readers are interested in sawing machinery, consequently they like to see and know how such machinery is arranged, constructed, and used in other countries beside our own.

In arranging the building of a heavy timber frame, the foundations are ordinarily a heavy item, from the great depth required by the length of the connecting rod; and if this is curtailed, the evil is entailed of sufficient friction on the guides. In the case before us, the makers have sought to reduce the height of the machine, by making the connecting rod forked, so as to embrace the frame, to both sides of which it is attached at the points, A A. To admit the vibration of the connecting rod, the guides are suitably overhung.

In the guides themselves, attention has been directed to diminish the friction, which, in surfaces moving at such a high velocity, consume a large proportion of the applied power. With this object, the back and front guides are not both V-shaped, as usual, but whilst the working side is made so, the other side is made flat, and has a brass plate pressed in contact with it by means of a steel spring, set up by adjusting screws to the exact pitch to keep the frame from chattering.

The lower saw buckles are of S-shape, and hook on to a projecting feather on the frame. They are set up sideways by a longitudinal screw, passing through all the distance pieces, but not through the saw buckles, so that any saw can be taken out in a few minutes.

The timber is prevented from rising, when the saws are entering, by the two legs, C C, which are screwed, (with double threads) into sockets hanging from one of the strong distance pieces, between the sides of the framing. When adjusted to the proper length, they can be fixed in position by set screws.

Provision is made for setting the log transversely. The frames, D and E, on which the ends of the log are carried, are fitted up in the slide-rest style, and can be shifted by the screws across the rack-bed. They are made to suit the varying widths of timber, by one of the arms, H, being made a fixture on the shaft, S, whilst the other slides on the shaft, and is moved by a screw, I, to give the requisite grip of the wood. A balance-weight, T, facilitates the adjustment. The other end, D, is provided with set screws for the same purpose.

The feeding-motion is as usual; the eccentric rod, N, taking on to a ratchet-wheel, for the feed, and a strap between the riggers, O, and P, giving the quick return motion for the rack.

The London Artisan asks its readers to give some particulars about the indicated power required for saw frames. In America five horse-power is allotted for driving a large rip saw, and a large circular saw. Gang saws are now common in American saw mills; but the common mode of working the reciprocating saw, is nearly the same as that represented above. An engine of three horse-power will drive one of these saws, but it is best to leave a good margin of power as a surplus; it is more profitable to do this than to work an engine or water wheel up to its full indicated power.

The lumber (dressed timber) interests of the United States are greater than those of all the other countries in the world put together. Everything, therefore, connected with our saw mills is of importance if it is an improvement. Saws involve more expense than all the other parts of a saw mill, because they are continually subject to wear, as they expend the whole power of the engine or water wheel upon the logs. The engine, wheel, frame, &c., can all be built strong enough to endure without incessant repair, not so the saws; they are continually getting dull and have to be frequently sharpened. The more knotty and hard the lumber, the more wear there is of the saws; how important then to have good saws—tools that do not require a continual rasping with the file. For a long time we received our best saws from England, but this is not the case now. Saws of all descriptions are now *tempered* on an entirely new principle, and by a new process—which possess qualities of a far superior order to those ever before made in any part of the world. In our next number we will describe this process by which said saws are tempered; it is patented and is the invention of Mr. Waterman, of Williamsburg, N. Y. This process makes saws of a superior temper, and it requires no heating oil baths, dipping in water, &c., as is the case with tempering steel tools by the common methods. The tempering of a saw is performed in an instant, and by a most simple operation, which cannot fail to surprise our readers.

Improved Bridge.

We learn by the Troy, (N. Y.) papers, that a bridge has been erected over the creek in Second street, that city, by the inventor, Dudley Blanchard, in company with Louis Felloes, of that city. It is an iron truss bridge of 73 feet span, composed of 24 separate castings, after six different patterns—four to each. It weighs about 5 tons, of cast-iron, and has about 2 tons of bolting. It has been tested with 40 tons on it, and no sign of deflection exhibited. The usual plan of making truss frames, is to have all the braces equal with a a top and bottom cord of uniform size throughout the whole length. This bridge is constructed with braces and chords of various proportions—each part of the truss frame being made and proportioned to the strain which it has to sustain. He employs less material in making a bridge of equal strength to that of the uniformed trussed bridges.—Messrs. Blanchard & Fellows are good practical mechanics, and are now engaged roofing the extensive rolling mill of the Albany Iron Works, a building 336 feet long by 135 feet wide, with an iron roof, supported on the same principle.

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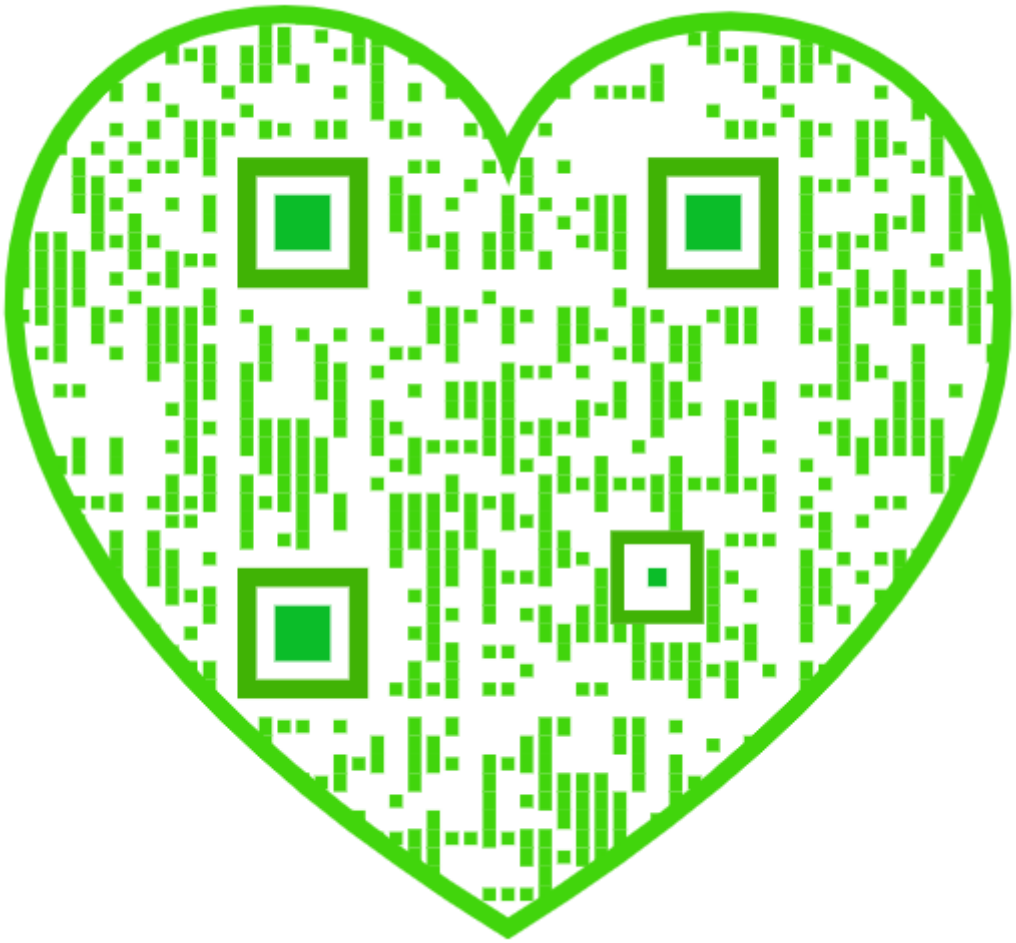

MISCELLANEOUS.

Fair of the American Institute.

(Continued from page 42)

MISCELLANEOUS.

Type-Casting Machine—Green's New York and New Orleans Type Foundry: H. H. Green, 128 Fulton street, New York.—The principal intention of the inventor of this curious little machine has been to cast type under a powerful pressure, so that the letter formed may be a more exact and sharp counterpart of the matrice. The apparatus, which is placed on a stand so as to be conveniently worked by the hand, consists, in the first place, of a small furnace, in which a quantity of type metal is maintained in a molten state by a fire beneath, the fire door being at the side of the furnace. In the midst, and rising above the molten metal, is a force pump, intended to inject a small portion of the fluid metal into the moulding-box. To the pump is fixed a pipe running through the furnace so as to connect with a corresponding aperture in the moulding-box, when the latter is brought forward to the furnace to receive the metal. The moulding-box is made of steel, and the top of it moves on hinges so that it can be lifted up to set the matrice in its place. The matrice or die consists merely of a piece of copper, the shape of the type, and having the particular letter, which is to be cast, sunk into it. As in every description of type, it is only the size of the letter which differs, it follows that the copper matrice alone has to be shifted when it is required to cast a different letter. The moulding-box is made to slide between guides to and fro, and is moved forward to receive the metal by a cam fixed on a shaft, which is worked by hand. On approaching the force pump, motion is given to the plunger by levers acted on by the above-mentioned shaft, and sufficient metal to form a letter is thereby injected into the matrice. This latter operation is aided by a stop-valve, which prevents the flow of metal, and as the shaft withdraws from the furnace, it falls back and permits the injection of the metal as above described. During this operation the box is held together by a species of clamp or spring, a spiral spring then forces the box back, the hold of the clamp is relaxed, and a spring, acting on the newly-cast letter, loosens it so as to allow it to fall into a spout, and from there into a receiving box. The inventor estimates that this machine will cast, on an average, 175 letters per minute. The operation is altogether very unique, and is deserving of high commendation, we therefore willingly award our meed of praise to the inventor for the improvement that he has made in the work of type-casting.

The great benefit derived by this machine is, that it casts metal 10 per cent. harder than any in use, which insures the printer an article well worth his money.

Protector Gas Meters—J. Laidlaw, New York.—It is well-known that the Meter in general use is open to many objections, from which may be enumerated that it is not infallible, and that it can be tampered with to defeat the purpose for which it is intended. The patentee of the above-mentioned invention purposes to obviate these defects, his object being to guard the gas companies against fraud on the part of a dishonest consumer, and also to make the public certain that they receive the amount of gas for which they pay. The most common manner by which the gas companies were defrauded was by tilting the meter to one side, so that more gas was consumed than was actually registered. On the part of the consumer it was complained that it was in the power of the company, by altering the level of the water in the meter to make him pay for more gas than he had used. These proceedings are prevented by such an arrangement, chiefly in the disposition of the pipes, that all unfair attempts are useless or defeat their own object. The proper quantity of water is maintained by using a pipe, down which the water flows when too much is poured into the meter; this pipe leads the water into a lower chamber, where it is drawn off by a syphon to the outside of the meter, provision being made that the gas cannot force the water out. If the meter is tilted to one side it is still quite efficient, and if tilted forward, the gas is cut off and cannot act on the drum, consequently the lights are extinguished. There is also a very handsome apparatus intended to test each meter before it leaves the hands of the maker or the gas company; this apparatus is on the principle of the gasometer, in fact it is a small one. There is a clock-faced index attached to it, which serves to check the accuracy of the meter.

Self-Regulating Anti-Corrosive Gas Burner—W. Mallerd, 170 Broadway, New York.—In addition to the usual mode of turning on the gas, a series of light flat valves is placed in the pipe near the burner to maintain a regular flow of gas. The anti-corrosive burner is made of a mixture of metals which are not specified.

Patent Lathe—Brown & White, Windsor Locks, Conn.—The peculiarity of this lathe lies in the mode of turning taper objects. The usual way to effect this is by shifting the tail-stock in a manner too well known to need description. In this lathe, however, the object is attained by placing a sort of bed or movable way on the lathe. The rest travels on the above way, which can be adjusted by a screw to any taper. It will be perceived that the idea is taken from a plan pursued in many lathes, of shifting the upper part of the slide rest when a similar object is in view. An engraving of this lathe will be found in Vol. 6, page 267, Scientific American.

MANUFACTURES.

With respect to the manufactured articles exhibited at the Fair, particularly the woolen and cotton fabrics, there is not so great a show as might be anticipated; of the above two fabrics, there is more competion among manufacturers of the former than of the latter; what are exhibited are, however, good, and comprise the various kinds of cloth, from the heavy beaver to the superfine. Walcott & Sons, New York Mills, exhibit several specimens of cottonades good and substantial; Walcott, Oneida Co., N. Y., some very fine jeans, and there is also a specimen of superior calico from Whiterock, Nesmith & Co., agents. Of shawls there is a diversified collection from the Utica Globe Mills, printed by two different parties—Mason, of Mamaroneck, N. Y., and Duncan, of Essex Co., N. J.; we mention their names, as well as that of the manufacturing firm, because the specimens exhibited are more remarkable for the superiority of the designs than for the qualityof their texture. Duncan & Cunningham, Essex Co., N. J., have on exhibition some good long shawls.

Prints, &c.—Of the common prints exhibited, those from the Fall River Works struck us as being among the best for quality, but were exceeded by others in beauty of design. There are also some good articles of this sort from Providence, R. I.

Linen Thread.—Of this manufacture we only observed one collection from the works of the American Thread Co., Mechanicsville Saratoga Co., N. Y.

Raw Silks and Cocoons—Miss Harriet Sammy, Lancaster, Pa.—The samples exhibited are numerous and very gratifying, evidently showing that this branch of industry may be profitably carried on in America with proper attention. If we can only succeed, as is evident can be done from the specimens here exhibited, in rearing the silk worm, what a vista is opened for future manufactures. As a matter of course, by growing the raw silk we shall be independent of the foreigner, and also be enabled to supply the manufactured article at a vastly lower rate than would remunerate to make importations from Europe. As this is a vastly increasing trade, and causes a large drain of specie every year to pay for the manufactured silks imported, it is a subject of national importance to encourage the growth of the article. Although we are not in favor of bounties of any sort, yet we do think that this is one that ought to be encouraged.

Woolen Hose—Gardner, Boston.—The specimens exhibited are good and very fine, superior to anything that we have ever seen imported.

Floss and Sewing Silk—Ryle, Paterson, N. J.—Showing that we can manufacture as well as grow the real article.

Hardware, Cutlery, &c.—Of hardware there is a respectable show, the articles exhibited being of superior finish, and equal to anything from Sheffield; in one article we beat them hollow, viz., locks; and there are several collections by various makers, all of which we cannot particularize, and it would be invidious, therefore, to give the names of one or two; we must leave our readers to examine and judge for themselves. We noticed, in this department, a collection of skates of every variety of form and shape to satisfy the most fastidious taste, made at Newark, N. J.; also fishing-hooks, percussion-caps, &c.

Glass.—Of this article there is a fine collection on view from the works of the Brooklyn Glass Co., consisting of every description, both plain and ornamental as well as colored.

In furniture, the most novel article that we saw was a spring bedstead, by Mauritz & Demeure, Centre st. The novelty of this bedstead is in the bed-bottom consisting of a series of spiral springs, funnel-shaped, and supporting a net-work of springs that form the bed-bottom on which the mattress rests. By this means there is obtained an elastic spring-bed particularly agreeable in the summer season.

Telescopes—H. Fitz, 237 Fifth street, N. Y., exhibits an eight-inch aperture Achromatic Telescope, mounted on a new plan of cast-iron equatorial, furnished with a clock for keeping the object in the field, and circles of right ascension and declination of 6 inches diameter.

Fusee for Blasting under Water—Reynolds, Godwinville, N. Y.—This apparatus is composed of a coil of cotton twisted round the powder, with the outer string well tarred, so that the powder is fired before the water can penetrate.

Sewing Machine—Otis Avery, Honesdale, Pa.—In addition to Singer's Sewing Machine, which is constantly at work to the edification of the curious, the above new invention is also on exhibition; it consists simply of two needles, which are made to perforate the cloth from opposite sides, and in doing this they pass threads through in such a manner that they become locked together in the form of a chain, the garment, as it is sewed, being drawn along by means of a string with a weight attached at the end. The construction is very simple, and easily adapts itself to the work

Stoves, &c.—Of these articles, there is a large collection on view, particularly of open grates of every variety; acompanying one of the latter we noticed a chimney-piece of white marble of exquisite workmanship, from Kennedy's Marble Works, 23rd street, New York.

Grates, Fender, &c.—W. & N. Jackson & Sons, 238 Front street and 891 Broadway.—There is a very choice collection of these articles from the manufactures of the above-named firms. The grates and fenders, ornamented with silver, glass, gold, and colors, from the purest white to the deepest black, are all that can be desired by the most fastidious. There is also on view a various collectiou of Summer Pieces, from unique original designs, exceeding anything that we have ever seen of the kind.

Pianos—In these articles we noticed something quite new. There are two or three varieties of the Æolian Pianoforte, and also an iron pianoforte, Firth, Pond & Co., Franklin Square, New York.—This latter instrument has the outer framing of iron, so that it is not so liable to injury, and is cased inside with wood so that the tone is not injured by the use of the metal. We will say more upon this subject next week.

Cast Steel—Andirondac Co., Jersey City.—The specimens exhibited of the steel made by the above-named company, are excellent and deserving of commendation.

Leather—We saw but two specimens of leather on exhibition at the Fair—one of dyed skins (bronze and other colors) from the Waterbury Leather Co.; and the other, specimens of calf-skin tanned in a new manner, the discovery of Prof. A. K. Eaton. We examined the leather attentively, and it appeared to us to possess all the necessary requisites of good leather, but so many processes have turned out failures that we are skeptical upon any new process until it has been well tested. It is worthy of remark that the manufacture of leather has been less advanced by the application of chemical science than any other of the arts, and yet the art of tanning leather is better understood now than it ever was before, but so many physical conditions are involved in the production of good leather, that scientific processes have been unable to satisfy them all.

The skins by this process are unhaired without lime or sweating, as we have been informed, so that there is no unequal action on the thick and thin parts. On the 10th of last August, Prof. Eaton received a patent for the use of sulphate of potash in the tan liquor, and some excellent practical tanners have certified to its usefulness. One calf-skin which we examined, was tanned in 8 days, and appeared to be as well tanned as any skin that we ever saw.

ANNIVERSARY ADDRESS—CATTLE SHOW.

Anniversary Address.—The Anniversary Address of the American Institute was delivered at Metropolitan Hall, on the 21st inst. by the Hon. James Dixon, and on the following day the prizes for the best cattle were awarded by the Judges at Madison Cottage. The orator in his address alluded to the extraordinary increase of New York since the Independence, than what was before that period a provincial town, has now become one of the great central points of universal commerce, and rivals the old marts of European trade.

Having dwelt upon the agricultural, commercial, manufacturing, and mercantile, resources of the country, the honorable gentleman said that it was not without reason that the heart of the whole nation exulted in every exhibition of the naval superiority of this metropolis, where her vessels out-sail those of England. It is an American triumph, and when one of her merchant princes despatches a fleet to penetrate the frost-bound regions of the frigid zone, and through the wintry night, on which for months no morning breaks—while the true heart of the hopeful English wife accompanies the stars in their unceasing vigils to search, amid polar ice and eternal snows, with superhuman endurance, for the long-lost British Admiral and his imprisoned ships, it is American benevolence that wakes the plaudits of the world. (Great applause.)

He concluded by paying a well-deserved eulogium to the late Mr. Downing. Politically, the address was in favor of protection.

Cattle Show.—We have attended the exhibition of cattle, &c., held at Madison Cottage, and are gratified at finding the spirit displayed by our agriculturists and farmers. There was a very good show of every description of cattle, horses, oxen, sheep, swine, and of poultry. Among the cattle we observed some fine Durham, Devon, and Ayrshire, bulls, cows, and calves, a cross with such sorts cannot fail to improve our stock. We likewise observed among the sheep several specimens of Merino, Liecester, South Down, &c., imported from Europe, and also among the hogs like improvements, we mean with regard to purity of breed, a subject of vast importance to farmers, for unless they cross the common stock with other breeds they cannot expect to improve it.

Of the bulls, the finest were Backwoodsman, a Durham bull weighing 2,325 lbs. owned by S. F. Taber, Chestnut Ridge; May-Boy, Devon breed, belonging to W. P. & C. S. Wainwright, Dutchess Co., N. Y.; and Prince Albert, ditto, owned by W. L. Cowles, Farrington, Conn. There were also several excellent specimens from Ayrshire, including seven bulls, three cows, and six heifers, imported by Mr. Watson. The show of native cattle was also good, and comprised some superior animals. There was likewise a considerable number of horses, among which were exhibited as competitors some superior thorough bred animals, the first premium in this department was awarded to Mr. C. T. Howell, Astoria, for the best stallion 4 years old. The best cow (native) belonged to R. R. Morris. In addition to the cattle there was a respectable show of poultry, turkeys, &c., common and fancy.

Atkin's Reaper.—This new reaping machine was exhibited on the ground, and in one respect is superior to its competitors at the Fair, we mean in the arrangement of a rake attached to the reaper called the "Automaton Rake." The reaper cuts in the same manner as others with the Hussey knife, the novelty consisting in the rake. This latter sweeps

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the bed where the fallen grain is deposited, presses it against a toothed plate, and both holding firmly the bundle of grain thus collected, swing round behind, and drop their contents in a neat bunch upon the ground. The weight of the raker is 150 lbs., and it is removed by unscrewing two bolts. Whole weight of machine 1,245 lbs.

Machines at the Fair which have been Illustrated in the Scientific American.

The following is a list, with the names attached, of the machines now on exhibition at the Fair of the American Institute, and which have been illustrated in various volumes of the Scientific American. It is evidence and proof of our common assertion, "The Scientific American is the Repertory of American Inventions:—"

1. Mortising Machine, Fay's, Vol. 1, No. 14.
2. Mortising Machine, Otis', Vol. 2, page 41.
3. Mortising Machine, Chandler's, Vol. 3, No. 48.
4. Planing Machine, Woodworth, Vol. 2, page 407.
5. Drawing-board, Chamberlain's, Vol. 3, page 9.
6. Planing Machine, Daniel's, Vol. 4, page 52.
7. Meat Cutter, J. G. Perry, Vol. 4, page 385.
8. Anti-friction Press, Dick's, Vol. 5, page 220.
9. Brick Press, Wagner & Imley's, Vol. 5, page 401.
10. Straw Cutter, Bertholf's, Vol. 5, page 52.
11. Smut Machine, Harris', Vol. 5, page 385.
12. Educational Tables, Allen's, Vol. 5, page 161.
13. Patent Spring Chair, Warren's, Vol. 6, page 76.
14. Sash Balance, H. C. Brown, Vol. 6, page 332.
15. Self-Rocking Cradle, D. Walker, Vol. 6, page 349.
16. Artificial Leech, Thomas', Vol. 6, page 369.
17. Metal Railroad Car, T. Warren, Vol. 6, page 388.
18. Tuyere, Porter's, Vol. 6, page 408.
19. Clothes Dryer, Buckman, Vol. 6, page 362.
20. Lathe, White's, Vol. 7, page 85.
21. Submarine Explorer, Alexander's, Vol. 7, page 81.
22. Sewing Machine, Singer's, Vol. 7, page 49.
23. Drill, Bushnell's, Vol. 7, page 33.
24. Brake, Railroad, Stevens', Vol. 7, page 132.
25. Bridge, Aerial, Houghton's, Vol. 7, page 169.
26. Gold Separator, Buffum's, Vol. 7, page 56.
27. Car Ventilator, Paine's, Vol. 7, page 244.
28. Iron Fence, Wickersham's, Vol. 7, page 233.
29. Spinning Frame, Brundreth's, Vol. 7, page 361.
30. Blind Hinge, Barker's, Vol. 7, page 292.
31. Gas Generator, Gee's, Vol. 7, page 353.
32. Quartz Pulverizer, Cochran's, Vol. 7, page 364.
33. Car Seat, Buel's, Vol. 7, page 356.
34. Straw Cutter, Taylor, Thomas, & Co., Vol. 7, page 372.
35. Gold Separator, Gardner's, Vol. 7, page 393.
36. Gold Separator, Barclay's, Vol. 7, page 401.
37. Punching Machine, Sanford's, Vol. 8, page 20.

The line of travel along the whole lake shore, from Erie to Cleveland, Ohio, will be completed and in full operation by the first of November, so that the obstruction hitherto experienced in the winter season from the closing of the lake will not be felt in the coming winter.

The Canadian Government has given official notice that should it be required, a horse-police force may be established along the line of the Quebec and Richmond Railway, for the preservation of the public peace, and to prevent injury to the works.

British Association for the Advancement of Science.

(Continued from page 27.)

Optics.—Sir David Brewster delivered a series of three discourses, devoted to an examination of Professor Dove's theory of lustre, a description of a new and simple polarscope, of which Sir David displayed chalk drawings on the board of the lecture-room, and whose great merit, he stated, was its extreme simplicity, and whose chief use was to measure a great degree of polarization of light. On some new phenomena of defraction, Sir David recapitulated the experiments of several scientific observers, among the rest Prof. Stokes, whose theory he canvassed, and in several respects differed from. With regard to the screw-like appearance of rays observed under certain circumstances, Sir David attributed them to the fact of the internal fringes expanding away among the external ones. He observed, with regard to the crossing of rays in some telescopes, it had been observed in some experiments that these telescopes in which this was the case possessed more power than those in which the rays did not cross in the proportion of 10 to 6½—an enormous difference—from which it was reasonable to deduce that there must be some effect produced by the rays of light crossing each other. He had suggested to his friend Lord Rosse the use of concave lenses to determine this, instead of convex lenses, as in concave lenses the rays never come to a focus, but only on the retina. Sir David then referred to other series of effects regarding defraction, communicated in a paper read on the 3d January, 1842, but never published by the author.

Sewed Muslin Manufacture in Ireland.—The sewed muslin trade was first introduced into Ireland between the years 1800 and 1810, but it generally made little progress until the decennial period 1820 to 1830, the employment being comparatively limited in extent, and the manufacturers confining their productions to a few articles, such as collars, trimmings, robes, and baby linens.

One of the circumstances which first gave a decided impulse to this manufacture was the introduction of machinery for spinning linen yarn, which had formerly been spun exclusively by the hand. This change left the females of Ireland almost without any source of employment. Under these trying circumstances the women and girls of the country anxiously availed themselves of the means of obtaining a livelihood by working at embroidery; and although a partial prejudice existed against it at first, it soon became quite evident that it would ultimately more than compensate for the loss of their former occupation.

Few changes tended to benefit the trade more than the introduction of lithographic printing (about the years 1830 to 1835), instead of the former tedious and expensive system of block printing. Each block cost from 3s. 6d. for the cheapest to £6 and £7 for the more expensive patterns, besides the delay of from one to three weeks for cutting them. Now, any pattern may be designed, drawn, and printed in a few hours, in endless varieties of style, at the cost of as many shillings as they formerly cost pounds. One great disadvantage under which manufacturers in Belfast formerly labored was the difficulty of selling their goods in a finished state at a profit; a prejudice existed, on the part of the buyers, against Irish goods, and so far was this feeling carried out that they were almost excluded from the London market, owing to the very low prices obtained there. From this cause their productions were mostly sold in a grey or unbleached state to the Glasgow manufacturers, who afterwards bleached and resold them in a finished state; but, about the year 1840, several additional persons commenced the trade in Belfast, who bleached and finished their goods as done in Glasgow.—This course has at length happily resulted in the removal of all prejudice against Irish goods, and since the fact has become known that about nineteen-twentieths of the goods sold in Glasgow are manufactured in Ireland, and the rapidly improving quality and value of Irish goods have been thoroughly tested, home and foreign buyers visit Belfast, to make purchases, as frequently as they go to Glasgow for that purpose; and the increasing demand for these goods, seconded by the additional skill of the workers, has, at length, opened a fair field for the Belfast manufacturers; and they are now enabled to introduce the once costly articles of their production into almost every market, at such prices, and in such variety, as cannot fail to lead to an enlarged consumption, and, consequently, a still further increase in the trade. No branch of manufacture in this kingdom has made such rapid progress during the last fifteen years, or has afforded more valuable employment. In Ulster, and westwards, the embroidery trade has become almost universal, and is at present giving more or less employment to a quarter of a million of individuals.

The wages paid for working vary in amount, depending in some degree on the prosperity of the trade or otherwise. Young and inexperienced workers cannot earn more than 6d. to 1s. per week, while the more expert and experienced worker will earn 4s. to 5s., and 6s. per week; and a few first-class hands can occasionally earn 10s. per week. The amount annually paid for labor alone, exclusive of materials, may be with safety estimated at £500,000 to £600,000, which is distributed in a shape the most useful and beneficial to the happiness of a people, the females being almost invariably employed in their own homes under the eyes of their parents and friends, and they can thus obtain a livelihood by their own industry without endangering their morals.

A great deal of good has latterly been effected through establishing training schools in the several localities where the work is being newly introduced. Competent teachers are employed to instruct beginners, who retain the pupils under their control until they are able to pronounce them as fit workers of a first or second class rate. These schools have generally been opened under the patronage and support of the landed proprietors in the neighborhood, among whom may be mentioned the Countess of Enniskillen, as one of the foremost in this good work, by whose philanthropy schools were opened on an extensive scale, at Florence Court, under the superintendence of a paid teacher, and several other females whom her Ladyship had previously sent to and maintained at Belfast, where they received instruction and prepared to impart it to others; and it may be mentioned here as an instance of the success attending that lady's praiseworthy endeavors to benefit the condition and increase the comforts of the humbler classes of society by their own industry, that now, after the lapse of three years, the trade is so well established in the district of Enniskillen, that above £400 is weekly paid in that town, for work done by the females of the surrounding neighborhood.

In conclusion (notwithstanding hostile tariffs), the beauty and cheapness of Irish embroidery have become pretty generally known, and it is steadily increasing in sale, even in the most exclusive of continental countries. In France, where by law they are totally inadmissable, they are, nevertheless, daily introduced, and one particular class of work finds extensive favor in the fashionable circles of Paris; so that with a home market, extended foreign relations, and all the other facilities of commerce, the embroidery trade may reasonably expect not only to maintain its position, but look forward to an increase and prosperity hitherto unknown.

The Rev. Dr. Edgar addressed the section at some length on the progress of the trade. The article had been at first one of luxury, yet from the time it was first introduced up to the present it had rapidly increased, for it contained the means of its own support; if it had depended on a single patron it would not have lived a day. He entered at some length into the statistics of its progress in Connaught, stating the means adopted to promote its extension, and the excellent effects in a social sense which attended its development there, adding the beneficial circumstances which arose from its introduction in the west, religiously considered.

An interesting conversation arose, in which the Archbishop of Dublin and other members of the section took part, in the course of which several questions were put to Mr. Holden, who stated, in reply, that they were indebted to the Scotch for having introduced the sewed muslin trade in this country, and they were the parties still who gave the greatest amount of employment to the Irish. On principle, he believed that the Copyright of Designs Act of Sir Emerson Tennent was very valuable, but the vast increase of the trade had induced them to look out for more speedy means than before, of supplying a greater variety of patterns to be quickly used, and the consequence was that advantage was not taken of that law. As to the result that had arisen from the great exhibition of 1851, he stated that there were several instances in which he had got orders from Germany and Spain; and not only, in his opinion, had the Exhibition given the trade a favorable position, but it had brought the Irish work into that notice which they wished it to obtain; concluding by quoting the feeling of the Duke of Wellington, that to teach the people of Ireland habits of industry was the best thing that could be done to make them comfortable and happy.

[The above condensed extract we publish as a subject of great interest, and it is one respecting which the great mass of the people are not well informed. They are led astray by the fusilades of partisan editors, who pretend to a knowledge which they, to their shame, do not seem to possess. Many of the fine sewed linen collars and handkerchiefs which are sold in New York for French work are of Irish manufacture.]

Steamship Building on the Clyde.—Dr. Strang, of Glasgow, read an interesting paper on steamship building on the river Clyde in Scotland. The west of Scotland, during the past 50 years, is much indebted to steamboat and marine engine building for its prosperity. It was there where steam navigation in Europe originated, and where steamboats to navigate the seas were first built and established. When Dr. Strang was reading his paper, he said, it is just 40 years, this moment, since the first successful steamboat, the tiny "Comet," of Henry Bell, made its trial trip on the Clyde. It was only 30 tons burden, and its engine was only of three horse-power.

During the past seven years, there were built on the river Clyde 14 vessels of wooden hulls, and 233 of iron hulls, in all, 247. Of these, 141 were built with paddle wheels, and 106 had screw propellers. The tonnage of the wooden steamers amounted to 18,331 tons and the iron vessels to 129,273 tons. The horse-power of the engines for the wooden vessels was 6,739; the horse-power for the iron vessels was 31,593. There were engines built for vessels not constructed on the Clyde of 9,434 horse-power, making a total of 247 vessels built, of 147,604 tons, and engines of 47,766 horse-power. The average tonnage of these vessels amounted to about 598 tons. Thus, in the course of seven years, on one river, there was built a fleet of no less than 247 steamers, each averaging nearly 600 tons burden. It seems, also, that iron is the principal material used for building the hulls, and the screw is more patronized than the paddle. During the present year, 1852, there have been built, or are building, on the Clyde, 73 steamers, only 4 of which are of wood, the rest iron, and 43 are screws, and only 30 with paddle wheels. On the Clyde there is in daily use 5 large dredging steamboats, capable of dredging 18 feet deep, and these machines have deepened the Clyde from 10 feet average depth to 17 feet. To construct steamboats with wooden hulls costs £14 per ton; iron hulls £12 ($56 20 cts.) per ton. The first Cunard steamships cost £50,000 each, the new one Arabia will cost £110,000. These statistics will be interesting to engineers.—We had thought that New York stood without an equal for steamship building, we have not the statistics on hand at present, but if they come up anything near those of the river Clyde, we sh ll be most agreeably surprised.

(To be Continued.)

New Locomotive.

The Camden and Amboy Railroad Company have placed upon their road a fine locomotive, constructed at Bordentown, on a new and somewhat unique principle. The smoke-pipe is formed in such a manner that it can be turned in any way according to the variations of the wind.

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NEW INVENTIONS.

Drilling Machine.

C. W. Coe, of Ashtabula, Ashtabula Co., Ohio, is about to take a patent for a new drill. There are two improvements in this invention. The first has reference to the feeding motion, and also to the mode of raising the drill from the work. The nut which works the feeding screw has on it a pinion capable of sliding up and down, but causing the nut to revolve by means of a groove and feather. This pinion gears into the driving wheel when at the upper part of the nut, a rapid motion is then given to the screw, which draws the drill quickly upwards. But when it is desired to give the feeding motion the pinion is depressed by a lever, and thus released from the teeth of the driving wheel. The pinion is then moved by two lugs or dogs attached to the inner part of the driving wheel; now, if the driving wheel has a motion given to it the reverse way to that used when raising the drill, it is evident a slow feeding motion will be given to the screw. If desirable, of course, more than the two lugs can be used.

The second part of the invention embraces a mode of holding the work to be drilled in any oblique direction. A clutch is employed for this purpose of a hollow conical shape, with a screw on the outside, this clutch is cut open in a vertical direction, so that if the work be placed within, it can be compressed by a taper nut working in the outside screw. A spring is used to open the clutch, when the nut is relaxed, and as it is attached by arms to the bed of the machine, this clutch can be set to any angle. The bed of the machine is movable so that the work can be shifted horizontally.

Locks for Safes, &c.

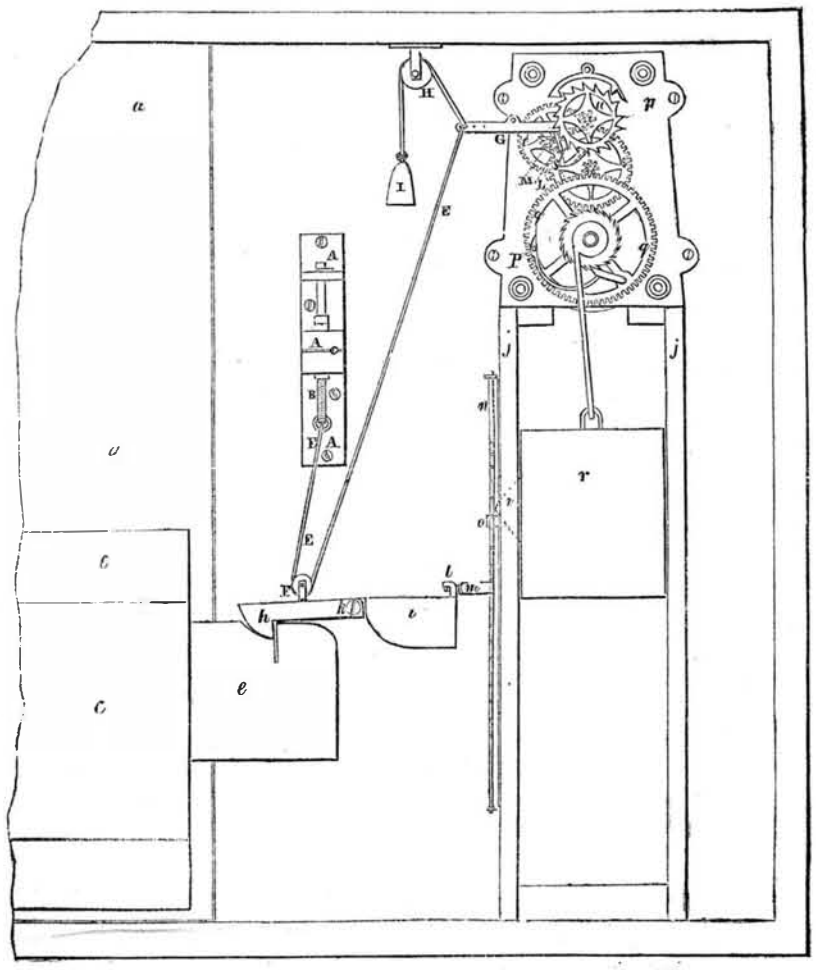
F. C. Goffin, of New York City, has taken measures to secure a patent for an improved lock for safes, bank, vaults, &c. For this purpose the inventor has made such an arrangement that the mere shifting of the lever which holds the bolt in its position is unavailing to open the lock. He makes use of several tumblers arranged in the ordinary manner, and each having a recess placed differently in all. Now, to open the lock, all these recesses must agree in order to allow a small pawl attached to the lever before-mentioned, to fall therein, but when the door is locked, this pawl catches in teeth cut on the edges of the tumblers. To open the lock, it is first necessary to detach the pawl from the teeth; this is done by a peculiar-shaped rod. A key, with prongs of different lengths, is next used to bring the tumblers into the required position to allow the pawl to fall into the recesses when the lever can be moved. There are several other checks upon the burglar, one of which is the impossibility of his attaining any knowledge of the recesses of the tumblers. One of the main features in the lock is the impossibility of forcing it as no pressure can be obtained on the bolt.

Clock-work for Fastening Locks of Doors, Safes, Vaults, &c.

The annexed engraving is a side elevation of an improvement in fastening the locks of doors, safes, vaults, &c., invented by William L. Bass, of Boston, Mass., and which was patented in December, 1851.

a a is the door; *c c* is the lock or iron framework inside, in which the bolt, *e*, is moved in and out by a pinion (not shown here.) In the bolt, *e*, is a notch, into which the pawl, *h*, of the lever, *h i*, fits, the said lever swinging freely on a bolt, *k*. The peculiar features of the invention consist in relieving the pawl from the bolt, and thus allow the unlocking of the door, which is effected by means of the movements of a clock. A A A is a frame of metal fastened to the partition; B is a screw to which is affixed a chain or cord, E, running on pulleys, F and H, and terminating with a weight, I. G is a lever, forked at one end, to which is suspended a loop, L (shown by the dotted lines), under the ratchet wheel, M. When the clock is in motion, the loop, instead of catching in the teeth of the ratchet wheel, drops from one tooth to another, but when the clock is stopped, it catches in the teeth of the latter, and holds the lever, G, in its place. At the end of the pawl, *h i*, is a hook, *l*, which fits over a projecting arm, *m*, in the hinged slotted plate, *n*, fitting against the weight-box, , and in any of the slots, can be fitted the stud, *o*. The weight, *r*, as it descends, strikes against the stud by means of a projection, *v*, and thus disengages the pawl from the bolt, *e*. P *p* is the back plate of the clock; *q* is the main wheel, to which the weight is attached; *s* is the second wheel, and *u* the crown wheel, —the whole forming a time-piece with the exception of the dial-work. The weight, *r*, being wound up on its axis, the escapement on the axis of the pendulum acts upon the crown wheel, *u*, and the weight, *r*, gradually descends as the gear wheels revolve. At the appointed hour, which is set by the stud or pin, *o*, in the selected slot, the knob, *v*, will strike it, and disengage the catch, *m*, thus allowing the bolt, *e*, to be withdrawn.

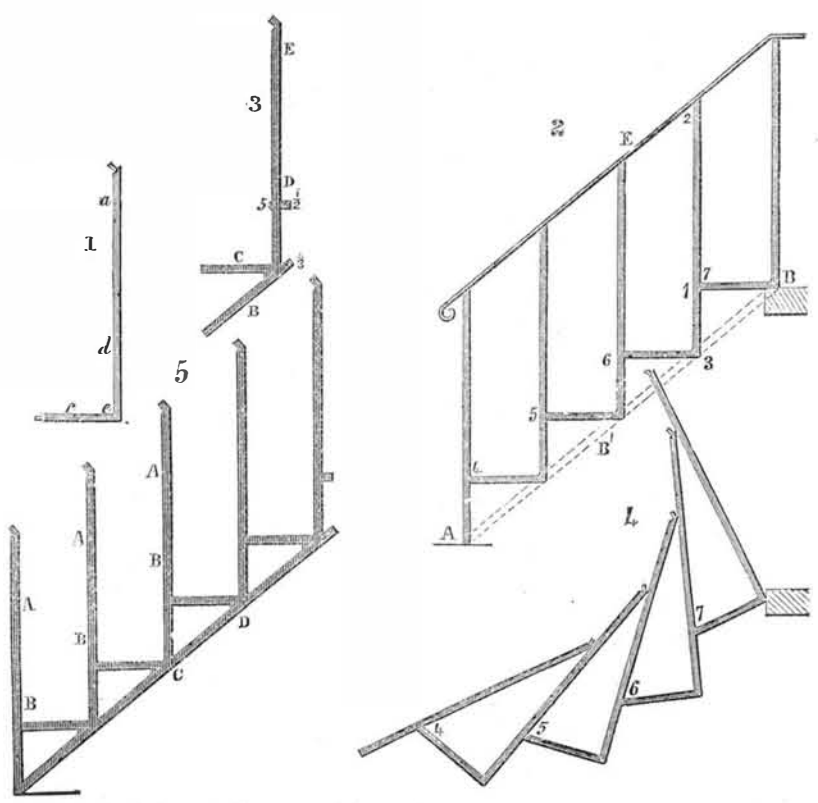
It is evident from the above that the bolt of a lock, fastened in this manner, will be a safeguard against any burglarious attempts, and it will be efficient so long as the clock is running, the limit of which can be regulated at the will of the owner. If, however, the clock should be stopped by any accident, and it is required to open the door on the outside, it is



done by applying a thumb-nut to an endless screw on the outside, which operates the vertical screw, B, which will raise the cord, E, and consequently the lever pawl, *h i*, from the bolt, *e*. The loop, L, (which is a kind of catch lever), when the clock is stopped, catches in the teeth of the wheel, M, holds the forked lever, G, in its place, and thus the cord is allowed to lift the pawl, but when the clock is in motion, the ratchet wheel, M, moves the loop, L, therefore the forked lever, G, is not held firm, and the latch cannot then be lifted.

More information may be obtained by letter addressed to the patentee.

IMPROVEMENT IN IRON STAIRS.



The annexed figures are views of an improvement in the construction of iron stairs, invented by Benjamin F. Miller, of this city, (N. Y.,) and which was patented October, 1849. The improvement consists in making use of a series of stationary bent levers made of iron bars, to form a stair. Out of a bar of iron is formed the baluster, *a d*, (figure 1) the rise, *d e*, and tread, *c*. A portion of the bar is bent to form the tread at right angles to the part which is to form the rise and baluster. The upper end of the bar is furnished with a tennon, *a*, to fit into the rail, and there is a tennon on the other end to be inserted into the hole in the rise of the preceding bar. The stairs, as constructed, consist of a series of these bent iron levers, attached to one another, and retained in their stationary and upright position as shown in figure 2 by the rail, E. The rail acts upon the long arm, 1 2, of the lever or bar, and thus braces the whole series firmly together. When a lighter rail and additional strength is required, a brace, B′, figure 2 is employed. It is either made in sections, or is continuous and is riveted to the shorter arm, 1 3, of the lever at the apex of the angle. To construct a stair of cast-iron on this principle the baluster, rise, head, and underbrace, are made in one piece as shown in figure 3. It has a lug at ½, to which the end of the next tread is riveted, and the end ⅛ of the under brace, B, projects to receive and be riveted to the brace of the next baluster, rise, and tread, and so on in succession. On the inner side of the tread, C, there is a ledge cast to receive the plank for forming the step; the projection, 5, in front of the baluster, E D, forms a finish to the front of the step. Figure 2 shows how the rail, E, keeps the levers in position, and figure 4 shows the position the stairs would assume if the rail was removed, and the rivetings, 4 5 6 7, yielded to a weight upon the treads. It is therefore plain, that so long as the rails prevent the balusters from changing their upright position, the stair will resist incumbent pressure when supported at its extremities, A B. In figure 5 the under brace produces a similar effect with this difference, the rail acts more powerfully on the long arm, A B. of the levers, while the brace, C D, acts on the short arms. Stairs constructed on this plan can be made in sections at the workshop, and transported to any place, and will then require only to be set up, which can be done by any handy person. By making the baluster, rise, and tread a lever, an increase of strength, with a diminution of material is obtained over stairs made in the common manner. These stairs cost very little more than wooden ones. The steps can be renewed when worn out without removing the railing. The stairs can be made ornamental as well as plain. A flight of ten steps built on this principle, weighing only 57 lbs., is in use in a dwelling house in this city, and has been tested with 1,500 lbs. Stairs on this principle have been in use in this city for two years. More information may be obtained by calling or by letter addressed to the patentee at No. 74 Trinity Place, N. Y.

Grain Separator.

Geo. B. Salmon, of Elmira, Chemung Co., N. Y., has taken measures to secure a patent for improvements in grain separators. The nature of the invention consists in cleansing and separating grain by means of a blast spout screen and trough. The object of the inventor, in the first part of his invention, is to overcome the inconvenience that is experienced by millers, from the fact that many substances, as cockle, &c., although smaller in size, have the same specific gravity as wheat, hence it is obvious that any amount of blast from the fan, capable of acting upon the cockle, &c., would also act upon the wheat. The inventor ingeniously takes advantage of the fact of the above-named substances being smaller in size than the wheat, to get rid of them at once by allowing them to pass through the finer sieve. In order to understand the latter arrangement, it should be explained that the screen consists of two sieves of different degrees of fineness, so arranged that the grain passes through the coarser one into the blast spout and trough. The necessary shake and inclination of the screen are effected by the use of an adjustable spring, operated upon by an eccentric or cam, which gives the necessary shake motion.

Steam an Extinguisher of Fire.

M. Dufardin relates, that a fire broke out a short time since at a spinning-mill at Douay. It penetrated to the carding-room; destruction seemed inevitable, and the engines were sent for, when it was proposed to fill the blazing room with steam. A steam tube traversed the apartment; it was broken by a stroke with an axe, the steam rushed out, "and in a few minutes the conflagration was extinguished as if by enchantment."

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NEW-YORK, OCTOBER 30, 1852.

Iron Lighthouses.

So long as wood is cheaper than iron in our country, it will be used in prefence to it for the sake of economy in the first cost. Every year, however, tends to increase the scarcity and price of timber, and iron is every day extending in use, and it will yet be as common to see iron houses of all kinds as it now is to see those of wood. We shall not live to see this result, but we can see it *afar off*. In our city, iron pillars are universally taking the place of those made of wood and stone, and in Britain, five iron ships are now built for one of wood. The employment of iron in marine structures forms an important era in respect to its use for lighthouses. The great expense and difficulty heretofore experienced in forming foundations of stone for lighthouses in sand banks, and in yielding soft places, have been overcome by Mitchell's iron screw piles, and Potts' iron cylinders, and then raising the superstructure on these. We have a letter before us from Mr. C. Pontez, stating that he is progressing with his foundations of iron cylinders for a lighthouse in the course of erection fifteen miles below Baltimore. A number of these cylinders are now sunk, and when all completed, they will form two concentric circles, the outer one twenty-three feet in diameter, composed of cylinders 26 inches in diameter each, and one inch thick; the inner circle will be seventeen feet in diameter with cylinders of 17 inch diameter. These cylinders will be filled with concrete, capped with iron plates, and all the caps connected together by wrought-iron ties, thus forming a continuous circuit. Around and within, the circles will be filled with large masses of granite to the level of low water, and on the top of the iron circuits the regular courses of masonry will be laid. The site is two miles from the shore, in water 10 feet deep, and thus a strong and permanent lighthouse will be built by the employment of iron foundations at an expense of less than one-half of what a stone foundation could be laid; indeed, the employment of iron, enables our marine engineers to build lighthouses in situations where it would be utterly impossible to build stone towers.

At the exhibition of the Franklin Institute now open in Philadelphia, there is the model of an iron lighthouse by Merrick & Son, to be built on screw auger piles bored 12 feet into the coral reef, at Sand Key, Florida, it has a base of 50 square feet will be 132 feet high, and weigh four hundred and fifty tons.—The lighthouse on Carysfort Reef, Florida, completed by the Topographical Bureau this year, is a wonderful iron structure, and was made by Merrick & Towne, of Philadelphia. It is built on piles arranged upon the angles and centre of an octagon; the heads of these piles are united by iron ties, and on this arise courses of iron pillars and a strong central column from the centre foundation to a level with the top of the upper series of pillars—from this central column, there radiate, at proper levels, iron girders of great strength, which, added to the horizontal ties extending from one pillar to another, form a combination so compact and stiff that no force of the wind, it is supposed, will ever disturb it. For the residence of the keepers of the light, a cast-iron dwelling of a circular and conical form is fitted to the above described frame-work of pillars, ties, &c., at a point 35 feet above the level of the reef, and 20 feet above the highest tides.

This dwelling consists of two stories. The lower one being about 8 feet in height, and 40 feet in diameter, is designed for the depoposit of stores, the kitchen, etc. It is fitted with 8 windows and 16 bull's eyes—the former for air, the latter for light. It contains six iron tanks for water and oil. The upper story is divided into six rooms, with a hall in the centre to allow a free ventilation in all the apartments. There is a door at each end of the hall, and a large window in each room. Surrounding this story is a gallery, exterior to the house, 5 feet in width, where the keepers may exercise.

From the centre of the hall rises a spiral staircase to the top of the structure. This staircase is enclosed by an iron cylinder, the whole weight of which rests upon the roof of the dwelling house. On the top of the structure is placed the watch room, and lantern, or light room, fitted to contain a Fresnel apparatus of the largest size, that will produce a light of the highest power. The diameter of the structure at the base is 50 feet, and 20 feet at the level of the watch-room floor. The height of the entire work above the surface of the reef is 127 feet, and the height of the centre of the light 115 feet.

It was for this lighthouse that the Fresnel Light was intended, which was sold in the New York Custom House for old iron and glass, when in charge of the Topographical Engineers, and not under that of the Light-house Board, as we have since been informed. The benefit of iron in marine structures, such as lighthouses, was first displayed by A. Gordon, C. E., of London, who, in 1841, erected one on Morant point, in the Island of Jamaica, on a position difficult of access, and where, from the frequency of earthquakes, no stone lighthouses above two stories high could stand. This lighthouse is made of cast-iron, and has stood several severe shocks of earthquake. A cast-iron lighthouse was erected by the same engineer on the Island of Bermuda, in 1845; it is 105 feet high, and is provided with a Fresnel light, which can be seen at 30 miles distance. Owing to the great expense, or total inability of erecting stone structures in many exposed situations, we cannot but feel grateful that iron meets and surmounts all such difficulties. The iron lighthouse in Bermuda has been the means of greatly reforming the habits of a large number of the inhabitants who formerly gained their livelihood as *wreckers*, an occupation not very favorable to the developement of the best qualities of humanity. The iron lighthouses on the dangerous Florida Reefs will also be the means of doing a vast amount of good in this respect. Within view of a first-class light on Carysfort Reef, there was wrecked in three years and four months, property to the amount of $1,147,500. The wrecking fleet on the Florida Reefs amounts to 47 vessels with a tonnage of 1,200 tons, and crews amounting to 350 men. At Key West, Florida, the amount of salvage decreed to the wreckers, in 1848, amounted to $199,140, and the wrecked vessels and cargoes amounted to $1,282,000. The iron lighthouses on the coast of Florida, if they do not prevent *all* this great amount of wreckage, will no doubt prevent nearly the whole of it; success then, we say, to our Iron Lighthouses.

Firemen on Steamships.

A very important case has recently been tried before the U. S. Courts in this city, which we cannot pass over in silence. On the late voyage of the steamship Franklin, one of the firemen, when he left New York, was intoxicated, and when heated at his labor became stupid, disobeyed the command of the assistant engineer, fell off the stairs, became insensible, and in that state the said engineer poured some pails of cold water over him, after which, in a very short time, he was a corpse. The engineer was brought before the court on a charge of manslaughter, but the evidence, to our view, did not exhibit any intention to injure the deceased man. The evidence, however, developed a most heartless system, and brought to light the life of a steamship fireman, in comparison with which that of the meanest serf is blessedness itself. It was stated that the firemen were generally intemperate, that they drank a great deal of spirits, and no wonder. The fire-room is below the water line of the ship, and is often at 80°, 90°, and 100° of temperature. The men have to work in this atmosphere, and sometimes they can scarcely breathe. Frequently they sink down exhausted, and by pouring water upon them, revive; this was applied to the deceased fireman, but he will wake no more till the last trump shall sound. The temperature of the human body is 99·5°, and although it has been proven by many experiments, that the body maintains the same heat in the man who lives in the cold regions of 30° below zero, and him who lives in the tropical regions of 90° above it, yet reason, common sense, and experience tell us that there must be a certain temperature of the atmosphere most in harmony with the temperature of the body.

Men have stood and may stand to live in an atmosphere of 100°, (and we have entered into an atmosphere above 200°) yet they can only do this for a short period. The difficulty of breathing (the fiery choking sensation) tells us that such an atmosphere cannot be breathed with impunity. For example, an atmosphere of 99·5°—the same temperature as that of the human body—must be in equilibrium with it; now, as the action of the lungs is to promote slow combustion in the body, the atmosphere, to be perfectly healthy for a man, should always be colder than the carbonic acid gas and moisture from the lungs. Unless this is the case, the atmosphere, as it should, cannot act as a good condenser to the heat of the lungs, therefore, a highly heated atmosphere must be injurious to health; it cannot be otherwise. We have observed that those men and women whose lot was that of working in warm rooms for dressing fine muslins, in factories, in printworks, firemen of steamships, &c., presented a bleached and consumptive appearance, and if we had statistics of their health and longevity, we have no doubt but the bill of mortality and sickness would be appalling. The evidence presented by the engineers and firemen of the Franklin conclusively proves this, and something more is demanded in the inspection of steamships than an examination of the hull and boilers for the safety of crew and passengers. The safety of the lives of firemen working away down in their minor pandemonium, demands the attention of all philanthropic men, and we hope that this case may lead to a better ventilation of boiler rooms on board steamships.

The best temperature of atmosphere conducive to health ranges from 42° to 75°; we have no statistics to prove this assertion, we only conclude that these atmospheric temperatures are the best, from a knowledge of their influence upon fermentation, and the robust forms and general health of the natives of those countries, the temperature of which averages about 50° throughout the year, and never rises 30° above nor 30° below that standard, excepting upon rare occasions. The natives of very cold climates are stunted specimens of the human family, and if some of the natives of Africa are tall and muscular, it is owing to a physical constitution of an entirely different character from that of the Caucasian race.—They would no doubt make excellent firemen in our present steamships, (only they would have to be more strictly watched than men of our own race,) but we believe that the temperature of the boiler room can be maintained at 65° or 70° without any loss of heat to the boilers, and the firemen thereby be enabled to work with safety and comfort.

Artificial Hydraulic or Portland Cement.

"The London Journal of Arts and Sciences" contains an article on testing the brick-beam erected at the Great Exhibition last year with Portland cement. In England no artificial hydraulic cement was discovered until the experiments of Mr. Frost, who was the real discoverer of the Portland cement. This hydraulic cement has superior qualities to any other; it is capable of setting very fast in water, and it can also be used as a mortar. The Portland cement is made of clay mixed in certain proportions with chalk, then ground in water and afterwards burned. It is submitted to a high heat, and has been called over-burned lime. It is now used extensively in England for docks in harbors, for stucco work, the construction of cisterns, &c. The discoverer of this cement conferred a great boon upon England; he came to this country a number of years ago, and resided for a long time in the city of Brooklyn, in which place he breathed his last at a good old age, the early part of this summer. His experiments with steam, and his pamphlet on *stame* (steam heated apart from water) which he termed "a substance with new qualities," are well known to the public. He was a man of a very gentlemanly appearance, he possessed great ingenuity and engineering skill, was an excellent practical electrotypist as mentioned by Dr. Lardner in his lectures in 1841, and had a very extensive knowledge of chemistry. There were few, if any, men in our country possessed of more general information connected with engineering than Mr. Frost. At one time he was possessed of considerable wealth, but his latter days were spent, though not in want, in comparative poverty. He was an inventor, and the last days of his life were like those of too many of that benefit-conferring class; he benefited others to the injury of himself.

The Fair of the American Institute.

It was decided by our State Courts that "The Art Union" of New York was a lottery. The American Institute at its present Fair, has flung the gauntlet of contempt at such a legal imputation upon such an Institution as an "Art Union." At the East end of the machine room there is suspended a picture resembling the scene of "The Money Changers" in the Temple at Jerusalem. Connected with it is the flaming sign, "Art Union," for the relief of Broadway, by steam carriages. At the desk beneath, a subscription list has been opened, and subscribers solicited. The object of this Art Union is the formation of a company for the relief of Broadway, by the substitution of steam carriages in place of horse omnibuses. We shall say nothing about the impracticability of such notions being carried out; but we do say, that no company has received, nor can receive, the privilege of running steam carriages in Broadway, and to form a joint-stock company for this purpose is a most extraordinary proceeding. And how does the conduct of the American Institute comport with true ideas of right and honor? It certainly appeared as an abettor of this scheme, or why did the managers allow part of the Fair to be turned into a subscription box? The Fair, in this respect, is an infliction upon visitors and a disgrace to our city: it has become a vender of spurious titles; for it is not an exhibition of American Industry only, but a dealer in baseless projects. Any person or persons have a perfect right to form all kinds of legal joint-stock companies for testing any scheme, practicable or impracticable, but the Fair of the Institute is not the place for selling stocks for such projects.

Hydraulic Rams.

We have received a communication from J. D. Rice, No. 397 Market street, Phila., which states that the information which we received about the hydraulic ram from the "Report of the Committee of Science and Art" of the Franklin Institute, Philadelphia, is full of error. The communication states that the ram said to have been put up in the town of Naples, N. Y., (as mentioned on page 13, this Vol., Scientific American) to supply it with water, has never distributed a single drop.—The Town Clerk of that village furnishes this information. The hydraulic ram of Birkenbine, which was put in to supply the Girard College, it is also stated, has been taken up, and that institution is now supplied with water from a pump operated by a steam engine. This is a question of facts in respect to certain statements; who has done wrong in propagating errors? This is to be answered by our Pennsylvania friends.

Portrait of Washington.

Sold by Williams, Stevens & Williams, Broadway; Wm. Terry, 113 Nassau street, sole agent.—An engraving from Stuart's superb picture of the Father of his country has been handed over to us for inspection, with which we are highly delighted. It is engraved upon steel by T. B. Welch, of Philadelphia, from the original painting in the Athenæum at Boston, and reflects the highest credit upon the artist. As a specimen of American skill, it is one that does infinite credit to our country, and we sincerely hope that the spirited publisher will receive all the patronage that he so justly deserves. It would be useless to enter into any critique upon the painting, which is too well known to require description, and it will be found that the engraving is a true copy of the original. Every feature is as accurately represented by the lines of the engraver as by the pencil of the artist. It is a national work and therefore deserves national patronage. We doubt not that the sale will be immense.

DANIEL WEBSTER, Secretary of State, died at his residence in Marshfield, Mass., at 3 A. M., on the 24th inst.: thus have recently passed away our three greatest statesmen—Calhoun, Clay, Webster.

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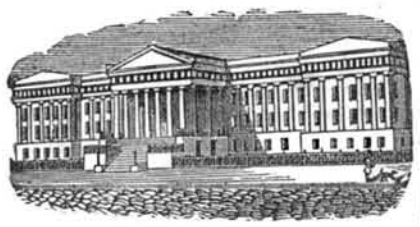

Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office.

FOR THE WEEK ENDING OCTOBER 19, 1852.

SEWING MACHINES- By Otis Avery, of Honesdale, Pa.: I claim, in combination with the needle bars, the spring holders, and adjustable guides, through which said bars pass, for the purpose of regulating the length of the stitch, substantially as described.

I also claim, in combination with the apparatus for regulating the length of the stitch, the weight or its equivalent, for drawing the cloth forward, as it is alternately released from the needles, by which means the feed motion is regulated, and made dependent on the length of the stitch, substantially as described.

SPREADING LIME AND MANURE—By Lewis Cooper, of Coopersville, Pa.—I claim, so constructing the pulverizing and fertilizing apparatus, as to effect the several functions of pulverizing and distributing manures of various kinds, at will, by so arranging the roller, that it can be raised or depressed in the discharging opening of the bottom of the hopper to any required level, so as to discharge a larger or smaller quantity of material previously brought to the desired degree of fineness in the hopper, and at the same time, to act as a valve to close. more or less tightly, the bottom of the hopper—the same roller also serving as a distributor of seed, in sowing broad-cast without any alteration of the machine, as set forth.

TOOLS FOR CUTTING PEGS OUT OF BOOT SOLES. —By D. D. Allen, of Adams, Mass.: I claim the adjustable float or cutter, connected to a shank by means of the pin or pivot, which turns loosely in the bearing or standard, so as to permit the float to adjust itself to the proper positions to cut the pegs from the heel to the toe of the boot, in the manner set forth.

GRAIN SEPARATORS—By Peter Geiser, of Smithsburgh, Md.: I claim the method of regulating the blast of winnowing machines by means of a flap on the fan case, arranged and adjusted, substantially as set forth.

I also claim the reciprocating toothed bars, with the trough, whose bottom is divided into three portions, the lowermost being tight, and acting merely as a conveyor—the middle one acting both as a conveyor and screen, to separate the wheat from the straw, and allow it to pass into the winnower, and the upper or third portion acting as a conveyor for the straw, and a coarse screen to separate therefrom the heads of unthreshed grain, that would not pass through the lower screen, the teeth of the reciprocating bars, moving the straw regularly along the trough, and working or shaking the grain and heads so effectually through the screens, that none is left to pass off with the straw, when it is discharged from the upper end of the trough.

PRINTING PRESSES—By L. T. Guernsey, of Montpelier, Vt.: I claim the combination of a reciprocating type bed, with an impression cylinder, which has the half rotary (or reciprocating rotary) movement, and also a movement to and from the type-bed, as set forth.

SEED PLANTERS—By Edson Hart, of New Albany, Ind.: I claim the rail with the rod or rods connecting it with the hopper, the said rods occupying traversing collars, with tightening screws, by means of which the relative distance of the axle and the feed shaft are adjusted to suit different arrangements of gearing according to the rate of feed desired.

APPARATUS FOR ELEVATING AND DISCHARGING BILGE WATER, ETC.—By Nehemiah Hodge, of North Adams, Mass.: I am aware that rocker pumps have been constructed to be operated by hand-power, but in these no adequate provision has been made for receiving and retaining the water as it is raised up; besides, their action is limited to a continuous rapid propelling power, whilst, by my arrangement, any varying inclination of the vessel, from a horizontal line however slow, puts the apparatus in operation, and, as heretofore constructed, could not, without encumbering the hold of the vessel, be placed therein; I do not, therefore, lay claim to any such pumps.

But I claim, in combination with a series or system of tanks and tubes, or their equivalents, the ventilating tubes, substantially as described, for the purpose of elevating and discharging water from the holds of the vessels, the whole being operated or worked by the motion of the vessel, as set forth.

WATER WHEELS—By Ira Jagger, of Albany, N. Y.: I claim the application of an adjustable lip, sliding on the inner surface of the buckets, of a turbine wheel to regulate the openings between the outer edges of the buckets, and thereby the flow of water from the wheel, substantially as set forth, and thus adapting the lines of the turbine to the head of water, and amount of work to be done however varying.

MAKING SODA ASH AND CARBONATES OF SODA — By Henry Pemberton, of Philadelphia, Pa.: I claim, first, the process of making soda ash, by heating the mixture of sulphate of soda and carbonaceous matters, without the use of lime or any other foreign matters, as preparatory to converting the same into other products, substantially as described.

Second, the process of treating the aqueous solution of the above heated products, by carbonic acid, then boiling to degrees, to form a mono-hydrated carbonate of soda, to be treated again in the dry state, by carbonic acid, to form bi-carbonate of soda, as set forth.

BEDSTEADS—By D. W. Smead, of Peru, Ill.: I claim the swinging foot board, to serve the purpose of a clasp for securing the bed clothes, it being held down by a ratchet and pawl, or otherwise.

SASH STOPPER AND FASTENER—By J. D. Smith, of New Britain, Conn.: I claim the construction of a window or sash stopper, operated by a winding spiral spring, the whole arranged and combined as described.

LIFE-PRESERVING SEAT—By G. P. Tewkesbury, of Boston, Mass.: I claim the life preserving seat, as made of a combination of the seat, the head or block, the air-tight vessel, and the connecting rods or grasping bars applied together and used, substantially as specified.

BURGLAR PROOF PLATES FOR DOORS, SAFE WALLS, VAULTS, &C—By Linus Yale, of Newport, N. Y.: I claim a method of making burglar-proof plates, doors, and chests, of iron, which, in the process of being cast into the form required for such plates, doors, and chests, surrounds or imbeds malleable iron rods or bars, or their equivalents, arranged substantially as described

I do not claim, in said plates, doors, and chests, the casting in of straight rods, or bars of malleable iron, or their equivalents, imbedded parallel with each other, in only one general direction.

DESIGNS.

COOKING STOVE—By Elihu Smith, of Albany, N.Y.

FORKS, SPOONS, &c.—By Robt. Taylor & Robt. O. Laurie, of Philadelphia, Pa.

COOKING RANGE—By Benj. Wardwell, of Fall River, Mass., & E. R. Barstow, of Providence, R. I.

Proceedings of the French Academy of Sciences.

DISEASE OF THE VINE—Much apprehension has been excited in Italy and the North of France, from the appearance of a peculiar disease among the vineyards of those countries—singularly enough it is the choice trellised vines that are first attacked before the common sorts growing in the country. It is attributed, by Dr. Robouam, a land owner in the environs of Paris, to the attacks of a small insect, called by him the *coccus radicum*, which likewise, according to him, is the cause of the disease of the potato.

GASTRIC JUICE—The food, and particularly certain descriptions of food, undergo, in the stomach, a necessary process of digestion, which is performed by the gastric juice, the process being the same whether the gastric juice acts in the abdominal cavity or in an open vessel. The permanent opening made in the stomach of a soldier in Canada, by a musket ball, and described by Mr. Beaumont, as well as the experiments performed with animals, prove irrefragably that the process of digestion, in animals which resemble man in their organization, is the same whether the action goes on in the stomach or in a vessel. It follows from this that it is very easy to obtain any quantity of the gastric juice, either from animals that have been killed at the slaughter-house, or preferably from living animals furnished with a permanent aperture in the stomach, so that the gastric juice may be taken out when required; the species of animal may, moreover, be changed at pleasure. By this means invalids and others, troubled with dyspepsia, may be supplied with the means of digestion, either by taking the natural gastric juice in a liquid state or by having it dried and reduced to powder; in this latter state it becomes active on being again dissolved. In either case the gastric juice may be given directly or in some other substance with scent and taste, or not, as may seen best. In extreme cases, an artificial digestion of the food may be first operated in vessels, and then allow it to be administered already digested. The patient will then have only to absorb and assimilate the food, the act of digestion having been already accomplished. The gastric juice has nothing disagreeable in its transparency, color, scent, or taste; when in a powder it has no sensible effect on the palate, and the food already digested may receive, like cooked viands, every sort of taste by culinary processes.

RELATION BETWEEN THE SPOTS IN THE SUN AND THE MAGNETIC NEEDLE.—According to observations made by M. Rodolphe Wolf, Director of the Observatory at Berne, it appears that the number of spots on the sun have their maximum and minimum at the same time as the variations of the needle. It follows, from this, that the cause of these two changes on the sun and on the earth must be the same, and, consequently, from this discovery, it will be possible to solve several important problems, whose solution has hitherto never been attempted.

HYDROPHOBIA.—It is pretended by a French physician, Dr. Bellanger, that there is, in reality, no such disease as hydrophobia, the whole calamity consisting in the imagination of the patient. He offers to restore to health, gratuitously, any one affected with this, according to him, imaginary malady.

PRESERVING PROPERTIES OF COFFEE.—M. E. Robin speaks highly of the preserving properties of coffee. For example, meat dipped in coffee, rather strong, which had been allowed to cool, and then left in the air for three days, has been preserved without any change worth mentioning. Since last November, 1851, it has assumed the appearance of cooked meat, and has never had any bad odor; the liquor is discolored, but preserves its aroma, which is very agreeable. Another piece of the same meat placed in a similar quantity of coffee, in the same manner, had a bad odor at the end of ten days, and putrified at the end of three weeks. The question of its certainty for preserving is one of interest to domestic economy.

Bell's Reaping Machine in America.

MESSRS. EDITORS.—In reply to an article in your paper of the 2nd inst., calling for information in relation to the importation of the "Scotch Reaping Machine," permit me to state, that in the year, 1834, the late John B. Yates, of this place (not P. B. Yates) imported one of the Rev. P. Bell's horse-power reaping machines, and in the following year it was put in successful operation here.

The machine was sent by Mr. Peter Gibson, of Dundee, via Liverpool, per ship Sheffield, Hackstaff, master, to the care of Messrs. Boarman, Johnston & Co., of New York, who received payment for the same at the office of Yates & McIntyre, in New York on the 9th day of April, 1835. Its whole cost on delivery at New York, including duties, charges, &c., was $345,40. The first trial of its working powers was made in the presence of several residents of this village, as well as Mr. Yates, the Rev. Mr. Bell, the inventor, and myself, and resulted in the reaping of a level field of wheat of from two to three acres in about as many hours. I will only add, that I then acted as the general agent of Mr. Yates's affairs here, and since his decease, which occurred in July, 1836, have performed the duties of an Executor of his will. Among the farming effects left by him was this very machine, and although now in a ruinous condition, it may still be seen at this place. Your's, &c.

GEORGE K. FULLER.

Chittenango, Madison Co., N. Y., Oct. 18.

[We are much obliged to Mr. Fuller for the prompt and complete manner in which he has replied to our request. We would state here to those who assert that Mr. Bell's machine was imported into this country before McCormick or Hussey's were invented, that O. Hussey's reaper was patented in 1833, and McCormick's in 1834.

Scrofula and Pork.

The Editor of the Journal of Organic and Medical chemistry, an able new periodical comes out savage on pork. He "defies all hog-eaters, chemists, and physiologists to prove that hogs' flesh is a healthy article of diet." He asserts that the name *scrofula* "had its origin in a disease peculiar to swine." This is true, the Greeks gave it this name—"swine disease." It may, however, be as wrongfully applied as many other terms. A man is called a *dunce* as an epithet of stupidity, derived from the term applied to the followers of the metaphysician, *Duns Scotus*, by their less able, but more bitter opponents.—Nevertheless, there appears to be something between scrofula and pork, if the testimony of many able physicians is to be believed.—There are some, however, who ride upon different hobbies; one upon one kind of food, and another upon a different kind. One will advocate bran-bread and vegetables, another beef, pork, wine, and beer. There should be a moderation in all things, for bad beef is just as full of scrofula as bad pork. The great object in selecting food is to have it good—in proper condition—and when hogs are fed upon good provender, and killed in good health, their flesh, if eaten in moderation, we presume will not cause disease. People of fair complexions, who live in cold changeable climates, are subject to scrofula. We believe, however, that too much pork is eaten in our country, and the strictures of the Journal of Organic Chemistry, are required to arrest attention and direct it to the evils arising from the unbounded use of pork for food among our people.

Gold in New Zealand.

The San Francisco Whig of September 1st, announces that gold has been discovered in New Zealand. The extent of richness of the gold mines is not stated. The group of islands are 1,200 miles from Australia, and of volcanic origin, several active volcanoes being found in the Northern Island. The schooner Creeper, which brought the news to San Francisco, had laid on for Port Philip, and had already obtained a full complement of passengers, when the discovery of gold at Manukau, induced them to leave for the new placers. The troops which had been sent for by the Governor General of Australia were also withheld, as their presence was likely to be wanted.

The Ship Challenge.

The challenge of the "American Navigation Club," offering a bet of £10,000 as a prize to the winning vessel, a Yankee ship against a British one, of 1,200 tons burden, to run from London to China and back, has not yet been accepted. It was to stand open for 30 days. The club, unwilling that England should so far forget her old chivalry, has extended the period for accepting the challenge, and will augment the stakes to £20,000, and give the British ship 14 days of a start. Is there not public spirit in all old England to accept this challenge? As this race does not involve high pressure steam, we hope to see the challenge taken up, or an offer made to race for love to test the relative speed of American and English built ships. A correspondent of the London Mechanics' Magazine criticised Mr. Griffith's work on ship-building, and insinuated that the English shipwrights were better acquainted with the science than the American ones. Here is an opportunity for him to prove it. He should exert himself to find some one te accept the challenge, when he does so he will find the stakes by calling on Mr. Peabody, in London.

Bomerang Propeller.

The last files of the Sydney Morning Herald contain accounts of a new propeller invented by Sir Thomas Mitchell, the Surveyor General of New South Wales, a trial of which in a small steamer at that port had just excited great interest. It is called the Bomerang Propeller, and is constructed on the principle of the weapon of that name used by the natives to kill game. Although the experiment was only on a small and imperfect scale, a speed of 12 knots an hour against a head wind is stated to have been obtained. The instrument is described to combine great strength and simplicity, while it has also the advantage that its motion in the water causes but a comparatively slight agitation, so that it is capable of being adapted to canal boats as well as to other vessels. At the conclusion of the trial Sir Thomas Mitchell expressed his conviction "that the weapon of the earliest inhabitants of Australia has now led to the determination mathematically of the true form by which alone, on the screw principle, high speed on water can be obtained."

What is to be Done with all the Gold.

By the arrivals from California gold keeps flowing in, like a steady stream, to the Atlantic States. We have the same accounts from Australia. Some of the ships which arrived in London recently brought from a million to two million of dollars worth of the precious metal. Allowing this great yield of gold to pour into the markets of America and Europe for some years to come, it must affect the currency in a most sensible manner. As yet things seem to flow on in the usual course, so far as the old standard value of the gold is concerned, and it is to be hoped that whatever change takes place, it will not be sudden, but gradual and temperate, in order that no revulsion in any branch of business may be caused thereby. It is the duty of bankers and national financiers to look this matter firmly in the face, and devise measures, if they can for the steady and regular procession of all kinds of business dependant upon the financial operations of banking firms.

Bellville and Illinoistown Railroad.

The grading, masonry, piling, &c., of the Railroad from Illinoistown to Bellville is advertised to be let, either as a whole or by sections of one mile each.

The distance is sixteen miles, and the payments cash. The road is to be finished by the 1st of May, 1853.

Panama Railroad.

The stock of this railroad is up to 129. W. C. Young, formerly president of the Hudson River Railroad, is to take charge of it, in place of Mr. Stephens, the deceased traveller.

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TO CORRESPONDENTS.

R. M. L., of Me.—Chloroform was discovered by Dr. Simpson, of Edinburgh, but its application for surgical purposes is claimed by two individuals—Dr. Jackson and Dr. Morton, both Americans; Dr. Jackson was awarded a gold medal by the Paris Academy of Sciences, and received the honor of being entitled the firstdiscoverer, but his claim is disputed by Dr. Morton.

I. E. C., of Md.—We should think your improvement novel and worthy of a patent, although it is difficult to decide without a sketch and description. J. S. is not the person you mention. You had better send us a model.

C. W. M., of Vt.—The use of glass tubes to indicate the height of steam and water in boilers, is well known, and could not be patented.

J. N., of Wis.—You are correct about the force of the water that would pass through the tube; but as action and re-action are equal, you would get the full benefit of it by allowing it to act upon the water at the stern of the vessel, upon the principle of a re-action wheel. This would save all your machinery, which will no doubt operate, but no benefit can be derived even from this, as the water running through the tube will resist the progress of the vessel just in proportion to the power that can be derived from it.

L. D., of Conn.—You wish for information that would require a whole copy of our paper to give. Quartz is the basis of all glass, and you would have to learn the crystal manufacture before you could master your business. Quartz can easily be melted with the blow-pipe.

J. D., of Ohio—The only way, to our knowledge, of bringing back brittle gold, is to heat it over again, and cool it in the atmosphere.

S. W. H., of R. I.—The matches which we have seen, made without sulphur, were of candle-box wood, dipped in phosphorus and the chlorate of potash.

J. N., Jr., of Md.—The mechanical construction of your pump is different from any we have seen, but the principle is essentially like Read's and others—well known.

M. M. M., of Vt.—We suppose a tubular boiler would be best for your use. Messrs. Stillman, Allen & Co., Novelty Iron Works, this city, can furnish you. The cylinder of the engine might be 30-inch stroke and 12-inch bore. Builders can tell you better than we can.

T. W., of Ala.—Your quantity of water per minute is very small; it is scarcely one horse actual power; 210 gals. per minute, and 24 feet fall, is of the following horse-power, 210 multiplied by 10, multiplied by 24, divided by 33,000 is equal to 1·52, a little over one-half nominal horse-power. A gallon of water is 10 lbs; 33,000 lbs. lifted one foot high, per minute, is a horse-power; about 30 per cent. is deducted from the nominal horse-power for friction, &c. If the 210 gallons fell per second, you would have sixty times the power.

M. L., of Boston—We could not find out your inventions at the Fair. If Mr. W. had called or shown us the model, it would be more proper than for us to go in search of it; although we often do such things it is not right to ask us; we have too many calls to attend to them all without serious loss of time; we are, however, always willing to notice all new and useful inventions.

E. B., of N. Y.—The prizes mentioned by you were offered by F. M. Ray, of this city. You are too late, as the committee have already passed their examination.

O. L., of Pa.—The idea you suggest in regard to cigars is new to us, but we doubt whether a patent could be secured for it. The principle is similar to the celebrated Meerschaum pipes, which are said to relieve tobacco of everything unpleasant, they are made of a kind of clay which consists of a hydrate of magnesia combined with silex.

W. F., of Tenn.—If you will again consider the subject of paddle wheels, you will see that your plan will not work well. We see nothing new in it.

J. C., of Geo.—We shall write you by mail in regard to the machine for cross grooving.

Dr. B. H. W., of Ky.—It will be impossible for us to advise you respecting the stave dressing machine simply upon a written statement. This class of inventions has received much attention, and it is difficult to produce any decided novelty. From what we could judge by examination of t e rough model you sent us some time since, we thought the contrivance new but by far too complex. The reduction of its parts may strip it of its novelty. We can scarcely judge without a clearly described drawing or model.

J. Y., of Ohio.—The model of your improvement came duly to hand, and the business will receive early attention. The specification will soon be sent to you for signature and oath.

B. B., of Md.—The noticing of a claim does not secure the invention; those which we notice have all paid their fees for the patents. We have never seen a machine exactly like yours, but we have seen a concave and convex with spikes working into one another for grinding corn. You will see an engraving of this mill on page 49, Vol. 4, Scientific American.

G. W. S., of Boston.—A tunnel to relieve Broadway was proposed some years ago. Mr. Osborn, of Albany, N. Y., has brought the plan before the public again, at the present Fair of the American Institute. It will not do until our sewers are differently built—the tunnel would be flooded at high tides, for our streets are not much higher than high water.

J. E. C., of Md.—Your wagon arrangement is new to us, and we believe it is patentable; but it will make the wagon more expensive, and carmen have evinced some partiality for the one which swings on an axis.

H. B., of Wis.—We are much obliged to you for your kindness. You have misinterpreted us in respect to the centrifugal force (according to Newton) increasing with the velocity. We only have asserted that there is no such a thing as an independent force called centrifugal. Be cautious about publishing your ideas on force. You know the moon describes a helical patch in its annual processions.

C. H. S.. of La.—The Plow, Loom, and Anvil is published at No. 9 Spruce street, this city, and the Franklin Journal is published by the Society of the Franklin Institute, in Philadelphia.

S. R., of Md.—We will attend to your business immediately. We do not exactly understand from your letter whether Mr. C. has received the note we sent him or not.

W. B., of Ala.—We do not like the idea of paying postage on your letter for the privilege of giving information in no way interesting to us. We have several times been so treated, we hope unintentionally.

A. B., of Vt—Your article partakes of a party character, consequently it cannot find place in our columns.

B. W. W., of Tenn.—We will endeavor to gain you the desired information.

R. S. K., of N. Y.—We hope you will not put your machine in operation until you have faithfully counted the cost. We have given you the best advise we could.

W. R., of Conn.—You ask, "what is a horse power?" we had thought that no one, a reader of the Sci. Am., would have been under the necessity of asking it. It is 33,000 lbs. lifted one foot high in one minute.

Money received on account of Patent Office business for the week ending Saturday, Oct. 23:—.

A. A. D., of Ga., $40; T. S., of Ill., $50: R. C. B., of Ill., $200; J. Y., of O., $65; B. J. D., of Md., $20; W. G. H., of Pa., $47; S. W. of Ill., $20; A. H. C., of N. Y., $25; J. H., of Mass., $35; S. B. H., of N. Y., $10; E. L. G., of N. J., $25.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending Saturday, Oct. 23:

H. F. P., of N. Y.; F. I. P., of N. Y.; F. T., of N. Y.; S. W., of Ill.; A. H. C., of N. Y., E. L. G., of N. J

Cheap Postage---Important to Subscribers.

The amended postage law, as enacted by the last Congress, having gone into effect on the 1st inst., we take occasion to make an extract from one of the sections, from which our mail patrons will see that the item of postage on the Scientific American will in future be less by one-half than formerly.

"Any periodical or newspaper, under three ounces in weight, can be sent to any part of the United States for one cent, and if paid quarterly or yearly in advance, either at the office of mailing or delivery, will be transmitted by the mails for half a cent each number; that is, for a daily paper, the postage will be only thirty nine cents a quarter, or one dollar and fifty cents a year; a weekly paper or periodical will be charged only six and a half cents a quarter, or twenty-six cents a year. If the weight does not exceed an ounce and a half, it may be circulated in the State where published at half of the above rates."

According to the above extract, subscribers to the Scientific American, residing in the State of New York will receive their papers by mail at thirteen cents per annum, instead of thirteen cents per quarter as formerly, thus reducing the cost of the Scientific American thirty-nine cents per annum to mail subscribers—an item worth saving.

Subscribers in the most remote part of the country will be required to pay but six and a half cents per quarter in future for the Scientific American, and although some postmasters may insist upon higher rates, our patrons should resist the attempt to extort money from them by any pretended construction of the more obscure points in the statute which tends to such an end.

Back Numbers and Volumes.

In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:

Of Volumes 1, 2 and 3—none.
Of Volume 4, about 20 Nos.; price 50 cts.
Of Volume 5, all but 4 numbers, price, in sheets, $1.
Of Volume 6, all; price in sheets, $2; bound, $2,75.
Of Vol. 7, all; price sn sheets, $2; bound, $2,75.

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office;—stating the name of the patentee, and enclosing one dollar as fee for copying.

Patent Laws, and Guide to Inventors.

We publish, and have for sale, the Patent Laws of the United States. The pamphlet contains not only the laws but all information touching the rules and regulation of the Patent Office. Price 121-2 cts. per copy.

Prizes.

Our subscribers will please to consider the great inducement offered to clubs, and to keep in mind the valuable prizes offered for the four largest lists of mail subscribers.

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☞ All advertisements must be paid for before inserting.

American and Foreign Patent Agency

IMPORTANT TO INVENTORS.—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chemical inventions, offer their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express or any other convenient medium. They should not be over 1 foot square in size, if possible.

Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents.

MUNN & CO., Scientific American Office,
128 Fulton street, New York.

PATENT BOX AND AXLE.—Patented by Kingston Godard, of Philadelphia, June 15, 1852, on exhibition at the American Institute. Application for purchase of rights to manufacture and use, or complete sets, must be made to GEO. C. HOWARD, Schuy'l Fifth and Market sts., Phila. J. C. H. is staying for a few days at the United States Hotel, N. Y. 1t*

ANOTHER GREAT DISCOVERY—By manufacturing of an article of daily use, affording a profit of 500 per cent.; Receipt sent to any place on receiving one dollar by mail, postage paid. Address A. M. MORSE, box 755, Rochester, N. Y. 7 2*

THE TROY IRON BRIDGE CO. are prepared to erect Iron Bridges or Roofs, or any kind of bearing trusses, girders, or beams, to span one thousand feet or under, of any required strength, in any part of the country. Their bridges will be subjected to severe tests, and can be built for about the price of good wooden ones. Address BLANCHARD & TELOUR, Troy, N. Y. 7tf

SLAUGHTER & PERRY'S IMPROVED CORDAGE MACHINE—The Patent Right to this valuable machine, for New York, the New England and Southern States, are for sale. Machines in operation can be seen at Todd, MacLay & Co.'s, Paterson, N J.; Clark's Mills, Cneida Co., N. Y., W. A. Richardson's, Louisville, Ky., and at the subscribers' in Fredericksburg, Va. Address F. & J. W. SLAUGHTER. 7 5*

POSTAGE STAMPS.—Post Office Stamps, of the denomination of 1, 3, or 12 cents, may be had at par by addressing MUNN & CO., Scientific American Office.

A. B. ELY, Counsellor at Law, 46 Washington st., Boston, will give particular attention to Patent Cases. Refers to Munn & Co., Scientific American. 13tf

$500—SEVEN HORSE POWER.—We have for sale a first rate 7 horse-power Engine and Boiler, fitted with governor, pump, fly-wheel, safety valve, grate bars, etc., all complete to be set immediately to running. The cylinder of the engine is six inches bore, and the stroke of the piston is 16 inches. The engine is attached to a cast-iron bed plate, and is one of Mann's best make. The boiler is an upright, 6 feet high, and 3 feet in diameter, composed of 50 flues, having all the connecting pipes complete and ready to be set up and attached to the engine in half an hour's time. The engine and boiler at the price above named ($500) is astonishingly cheap for its worth, and we hope soon to receive an order for them. Boxed and shipped for $500. Address MUNN & CO., Scientific American Office.

IRON FOUNDERS MATERIALS—viz.: American hard white and grey Pig Iron; No. 1 Scotch Pig Iron; Iron and Brass Moulding Sand; Fire Sand and Fire Clay; Core Sand and Flour. English and Scotch patent Fire Bricks—plain, arch, and circular, for cupolas. Pulverized Soapstone and Black Lead. Sea Coal, Anthracitc and Charcoal Foundry Facings of approved quality, always on hand and for sale by G. O ROBERTSON, office 135 Water street, (corner of Pine), N. Y. 3 6*

CHAS. W. COPELAND, Consulting and Mechanical Engineer, Surveyor of Steam Machinery, &c., No. 64 Broadway, N. Y., superintends the construction of steam vessels, steam engines, and machinery, of every description; specifications and contracts prepared; also general plans and drawings in detail furnished. Steam engines surveyed and valued, and condition reported. Mr. C. also acts as agent for the purchase and sale of steam vessels, steam engines, boilers, &c. Steam and Vacuum Gauges, Indicators, Sewell's Salinometers, etc, etc., on sale. 50 5eow*

IMPORTANT TO IRON FOUNDRIES—The Galvanic Alloy Manufacturing Co., Nos. 401, 403, and 405 Cherry st., N. Y., will furnish the Aerostatic Fan Blower at $55, and with patent fitting at $65, that produce sufficient blast for the largest cupola, melting 3 and 4 tons of iron per hour; taking less than one half the power of those now in use, that cost from $80 to $100. The wings, being only about an inch in width (planned upon entirely new and mathematical principles), produce double the blast with half the power of other blowers. Warranted in all cases, or they may be returned and the money refunded. 38 eowtf.

BAILEY'S SELF-CENTERING LATHE—The best in America for Chair Stuff, Wagon Thills, Rake, Fork, Hoe, and Broom Handles. Persons wishing this Lathe, warranted to do twice the work of any other lathe, by applying to L. A. SPALDING, Lockport, N. Y., can be supplied. The following certificate of Birge & Brother, extensive chair manufacturers, at Troy, N. Y., is to the point:—

"After making a perfect and thorough trial of Bailey's Self-Centering and Self-Adjusting Lathe, we can cheerfully recommend it as in every way calculated to perform its work in the best manner—as it is the best Lathe we have ever used in our manufactory; and having used many different kinds, we feel safe in asserting that it is probably the best machine of the kind in use. BIRGE & BROTHER. Francis Miller, Lucius Foot, Turners for B. & B." 3 3m

BALLOONS—Of any size made to order, warranted; also Wise's complete work on Aeronautics; price $2, sent postage free to any part of the United States. A 25 feet Balloon on hand. Orders punctually attended to. Address JOHN WISE, Aeronaut, Lancaster, Pa. 6 6*

BEARDSLEE'S PATENT PLANING MAchine, for Planing, Tonguing and Grooving Boards and Plank.—This recently patented machine is now in successful operation at the Machine shop and Foundry of Messrs. F. & T. Townsend, Albany N. Y.; where it can be seen. It produces work superior to any mode of planing before known. The number of plank or boards fed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the abovenamed foundry—or at his residence No. 764 Broadway; Albany. GEO. W. BEARDSLEE. 23tf

MACHINERY.—S. C. HILLS, No. 12 Platt-st. N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's and Law's Planing machines; Dick's Presses, Punches and Shears; Morticing and Tennoning machines; Belting; machinery oil, Beal's patent Cob and Corn mills; Burr mill and Grindstones; Lead and Iron Pipe &c. Letters to be noticed must be post-paid. 1tf

BLACK LEAD CRUCIBLES, and all kinds of melting pots, of superior quality, made to order and warranted equal to any of the kind made in the United States, by D. H. PURINTON, Somerset, Mass. All orders promptly fulfilled. 2 10*

LEONARD'S MACHINERY DEPOT, 109 Pearl-st. and 60 Beaver, N. Y.—Leather Banding Manufactory, N. Y.—Machinists's Tools, a large assortment from the "Lowell Machine Shop," and other celebrated makers. Also a general supply of mechanics' and manufacturers' articles, and a superior quality of oak-tanned Leather Belting. 45tf P. A. LEONARD.

PATENT CAR AXLE LATHE—I am now manufacturing, and have for sale, the above lathes; weight, 5,500 lbs., price $600. I have also for sale my patent engine screw lathe, for turning and chucking tapers, cutting screws and all kinds of common job work, weight 1500 lbs., price $225. The above lathe warranted to give good satisfaction. J. D. WHITE, Hartford, Ct. 39 26*

PAINTS, &c. &c.—American Atomic Drier Graining Colors, Anti-friction Paste, Gold Size, Zinc Drier, and Stove Polish.
QUARTERMAN & SON, 114 John st.,
1tf Painters and Chemists.

LATHES FOR BROOM HANDLES, Etc.—We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pillars, Rods and Rounds; Hoe Handles, Fork Handles and Broom Handles.

This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch and work as smoothly as on a straight line—and does excellent work. Sold without frames for the low price of $25—boxed and shipped with directions for setting up. Address (post. paid) MUNN & CO.
At this Office.

DRAWING BOARDS—Patent; 23 by 29 inches, with extensive Scales and Sheet Fastener. Descriptive Circulars sent on application; $10 for Board and T Rule. Sent by Express. Address, postpaid, CHAMBERLIN & CO., Pittsfield, Mass. 50tf

FALES & GRAY (Successors to TRACY & FALES), RAILROAD CAR MANUFACTURERS—Grove Works, Hartford, Connecticut. Passenger, freight, and all other descriptions of railroad cars and locomotive tenders made to order promptly. 1tf

IMPORTANT TO SOAP MAKERS—Letters Patent of the United States having been issued to Wm. McCord on the 27th of July, for a valuable improvement in Soap, all manufacturers, venders, and users are hereby cautioned against the use of Kaolin, or other equivalent aluminous minerals combined with ammonia, as they will, by so doing, infringe this patent, and subject themselves to prosecution. All the necessary fixtures for making 2000 lbs. per day, will cost not to exceed $75; two persons only required to attend the manufacture. Rights to manufacture this the most valuable soap, are offered for sale on reasonable terms. Apply to WM. McCORD, 141 Sullivan st., N. Y. 47tf

LOGAN VAIL & CO., No. 9 Gold street, New York, agents for George Vail & Co., Speedwell Iron Works, have constantly on hand Saw Mill and Grist Mill Irons, Press Screws, Bogardus' Horse-Powers, and will take orders of Machinery of any kind, of iron and brass; Portable Saw-mills and Steam Engines, Saw Gummers of approved and cheap kind, &c. Gearing, Shafting, large and small, cast or of wrought iron. 11 1y

NEW HAVEN MANUFACTURING COMpany, Tool Builders, New Haven, Conn., (successors to Scranton & Parshley) have now on hand $25,000 worth of Machinist's Tools, consisting of power planers, to plane from 5 to 12 feet; slide lathes from 6 to 18 feet long; 3 size hand lathes, with or without shears; counter shafts, to fit all sizes and kinds of universal chuck gear cutting engines; drill presses, index plates, bolt cutters, and 3 size slide rests. The Co are also manufacturing steam engines. All of the above tools are of the best quality, and are for sale at 25 per cent. less than any other tools in the market. Cuts and list of prices can be had by addressing as above, post-paid. Warehouse No. 12 Platt st., New York, S. C. HILLS, Agent N. H Man'g Co. 45tf

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SCIENTIFIC MUSEUM.

The Purifying of Wine.

There can be no doubt but that the United States is fast becoming a wine producing country. Near the city of Cincinnati, no less than 1,200 acres of vineyards are now under cultivation for the production of wine for sale. About 300,000 bottles of it will be made this year, and perhaps one half as many more next year. This wine is made mostly from the Catawba grape, and is said to be of as good a quality as any made in Europe. In speaking of a fertile and rich land, the orientals used the terms, "it abounds with oil and wine." In those countries where it is used for a table drink by all classes, the same as we use tea or coffee, the people are never given to drunkenness, but use it with moderation as a necessary of life, and never drink it for mere drinking sake. Old fermented wine (what is named unfermented wine is not wine), is the most healthy drink, hence to obtain it of good quality, the wine which is made this year will not be sold for four years more, but will be kept in casks, in vaults where the work of fermentation will proceed so slow that acetic acid will not be formed. In the article published in the Scientific American of last week, on "The Fermentation of Beer and Wine," Liebig lays down a plan for the purification of wine by a quick process, which deserves the attention of our wine growers. By practicing it they will save considerable money, and they should at once experiment—give it a fair trial—and if found successful, put it into practice.

There are some wines sold for "the pure juice of the grape—unfermented"—which we must say are not healthy, in fact they are not true wines. By slow fermentation, the juice of the grape deposits on the sides of the casks in which it is contained, quite a thick scale of a dark brown substance, which is as hard as a stone and named "crude tartar." In every case the juice of the grape should be deprived of this substance before it is used. In that scarce and dear wine of Hungary, obtained from the ripe grapes which, by their own weight when laid in baskets, press out their juice, and not obtained from those submitted to the press, this substance, we believe, is unknown, and this accounts for its superiority.

Human Fat Candles and Soap.

When the cemetery of the Innocents at Paris was removed to the outside of the barriers, the buried corpses which had accumulated to the depth of 60 feet, were found, to a great extent, apparently converted into fat. The substance of the skin, cellular tissue, and tendons, all the soft parts, and even the bones had completely disappeared, leaving only the fat, which, resisting longest the influence of decay (oxygen), remained in the form of margaric acid. This human fat was employed to the extent of many tons by the soap boilers and tallow chandlers of Paris for the manufacture of soap and candles. The French are a people of fine sentiment, and they certainly carried the quality to a charming point of reflection in receiving light from candles made out of the bodies of their fathers. We loathe the cannibal, but civilization has features which, if not rendered familiar, would be as repulsive as the practices of the savage.

What is heat?

Maj. G. G. Rains, U. S. A., in a scientific lecture before the Port Huron Lyceum last winter, asserted, with argument to prove, that as an alkali and acid combine to produce salt, so positive and negative electricities combine to produce heat; that the ocean of heat pervading space is, therefore, a compound, in which undulation produces light, while friction and contact of different bodies, separate its parts, and produced electricity.

An Excellent Tooth-Powder.

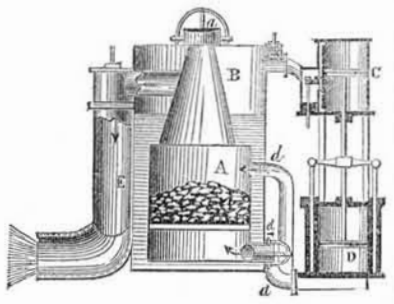
Dissolve gunpowder in a tumbler of water, and when settled pour off the clear water, and the remainder is the tooth-powder. Try it.

To clean the hands of the discolorization from nitrate of silver (lunar caustic), dissolve iodate of potash in water, and with it wash off the stains.

Heat for Propelling Ships.

The annexed engravings are sectional views for explaining a mode for propelling vessels by the direct effect of the products of combustion applied to propel the vessel. The proposer of this plan is Alexander Gordon (of Scotland we believe) somewhat famous as the author of a work on the propulsion of steam carriages on common roads. The London Mining Journal states, in 1846 it noticed this plan which has been patented. The nature of the invention consists in propelling vessels by the action of the products of combustion raised in a closed furnace supplied with air by blowers, impinging on water from a pipe at

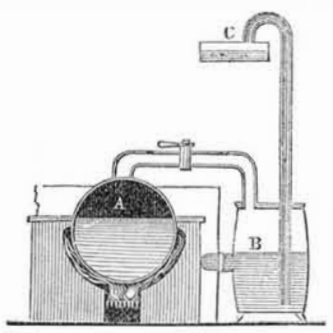
Fig. 1.



the stern, thus driving the vessel forward. It is stated that several competent and influential gentlemen in England, together with a rich ship-builder, have urged Mr. Gordon to introduce his invention, and the Lords of the Admiralty have offered the use of a screw steamer to make a trial. Mr. Gordon has issued a pamphlet, wherein he lays down his principles as follows:—1st. Heat is the propelling power. 2nd. The locomotive powers of the locomotive and rocket are derived solely from heat; steam is the result of part of the transmission of heat to water, and the engine transmits this power; the rocket is impelled by the direct products of combustion; he applies the product of heat to impel a vessel by applying the direct products of combustion to force it forward, upon the principle of a rocket's action in water.

A, figure 1, is the chamber of combustion, there may be a number of them; B is a boiler surrounding the furnace, it receives its heat by radiation, and makes a small quantity of steam to work the blowers, D, by a small steam engine, C. The air is forced in by the pipes, *d d*. The furnaces are to be supplied with fuel only once in two hours, through the cap, *a*; the blast is to be turned off while the fire is thus being fed. The heated gases pass through the funnel, E, to act upon the

Fig. 2.



water at the stern of the vessel upon the same principle as Rumsey first employed water, only he forced it in by a pump which was worked by a steam engine. In figure 2 is shown the method which the Marquis of Worcester employed to force up water by the direct agency of steam. A is the steam boiler, the steam of which acts directly on the water in the vessel, B, which forces it up into the receptacle, C. Mr. Gordon calculates that a cubic foot of anthracite coal in combustion will exert a force equal to 473,600,000 lbs. raised 1 foot high, but in the boilers of steamships he asserts, it never exceeds 85,000,000 lbs., leaving a balance of 388,600,000 lbs. against machinery. Heated air, he also alledges, is more economical then steam, saving more than 2½ lbs. of coal out of every 8 used. "One-half the heated air," he says, "escapes out of the chimney of steam boilers, and as much as 20 per cent. is lost, which does not enter the water," and thus Mr. Gordon asserts that only about 30 per cent. of the force of heat generated under a steam boiler is obtained by using the steam. All this 70 per cent. he is going to save by the hot carbonic acid gas—the products of combustion—applied directly to the propulsion of a vessel as represented.

There is not too much truth in the assertion that "about 50 per cent. of the heat passes up the chimney," but we do not know what remedy to devise excepting the complete combustion of the fuel and plenty of heating surface to absorb the heat. We do not see how Mr. Gordon's plan will operate at all. As far back as 1827 a gas and heated air engine was patented by Mr. Ward, of Baltimore, Md.—We believe that Mr. Fulton, of Baltimore, four years ago, proposed to drive vessels by hot water forced through tubes towards the stern of the vessel, but we have never before seen or heard of anybody but Mr. Gordon who proposed to drive a vessel by *smoke*. It is very evident that a fire would not burn well in a stove if the chimney pipe dipped down into a tub of water, and no one who understands the law of gaseous absorption would propose it. The reason why a chimney *draws* (we use the common term) is owing to the atmosphere being a gaseous element, which absorbs, (by a law now well understood), or receives another gas into its bosom. This is not the case with water, therefore, Mr. Gordon employs a blower to force the air in, consequently the force of the blower is all the power he can have to drive his vessel. But then, as the blower is to be propelled by heat radiated from the furnace, and as the furnace will not draw through the water, we do not see how the smoke principle can be made to operate at all. Mr. Gordon asserts that he will save three-fourths of the fuel, one-half of the cost of attendants, the great tonnage of the coal, three-fourths of the first cost of machinery, three-fourths of the annual expense of maintainance, and effect a great saving of life and property. In short, a new era in ship propulsion is about to be ushered in by Mr. Alexander Gordon, by substituting carbonic acid gas for steam, and applying it directly to propel a vessel by allowing it to issue at the stern through a funnel, almost like the re-action water-wheel.

The Harlem Railroad Tunnel.

On Thursday morning of last week, as the first train down was entering this tunnel, the engineer perceived something looming up dark on the track, put on the brakes, and arrested the train just in time to prevent a fearful collision, with a huge mass of falling rock, and thus saved the lives of perhaps 30 or 40 passengers. There were about 400 passengers on the train, and had it been a night instead of a day train, there can be no doubt but a fearful loss of life would have been the result. It is good that a merciful Providence watches over the lives of the passengers who journey through that tunnel, for the Railroad Company do not. Last year a mass of rock fell down in this tunnel just after a train had passed; at that time we directed attention to a means for preventing the contingency of an accident by any such a cause; this was to arch the whole interior of the tunnel with brick, wood, or iron. This will prevent the rock from falling down.—The Grand Jury of New York should indict the company for keeping this tunnel in such a state—it should be declared unsafe and dangerous. This should be done at once, for we are sure that no less than 10,000 passengers pass through this tunnel every day. One of the engineers, to our knowledge, has declared that he never enters this tunnel with his engine without experiencing a fearful foreboding. This is an evil which should be remedied at once. Will the Railroad Company see to it that this is done?

An Unrighteous Act.

The Wheeling Intelligencer gives an account of a certain contractor on two railroads who lately absconded after receiving the payment of $6,000 on estimates of his work. He had two gangs of workmen whom he left unpaid for more than a month's work. This was a very wicked act; the money would have done these poor workmen much good, in providing something for winter, for which they had no doubt intended it.

A railroad convention was held at Houston on the 11th ult., at which spirited resolutions were passed, recommending the State to engage vigrously in constructing them.

LITERARY NOTICES.

Railway Machinery—This is a new work, to be completed in 24 parts, at 65 cents each, by Daniel K. Clark, engineer, and is published by Blackie & Son, of Glasgow, Edinburgh, and London, and No. 117 Fulton street, New York. It is a treatise on the Mechanical Engineering of railways, and embraces the principles and construction of the engines, &c. It commences with a history of the Locomotive, and is illustrated with beautiful wood engravings. Each part contains two double plates, and one or two sheets of letter-press, with many good wood-cuts. From the specimen before us, we believe it will be the best work of the kind ever published.

Complete Practical Brewer—This neat and useful little volume, by M. L. Byrn, M. D., has just been published by H. C. Baird, of Philadelphia, and is for sale by John S Taylor, 143 Nassau street, this city. It contains plain and accurate instructions in the art of Brewing Ale, Beer, and Porter, also for making the Bavarian Beer, Root Beer, Ginger Pop, Sarsaparilla Beer, &c. The making of malt beer is an important business in our country, and as a beverage, or a drink for the table, good malt beer is much healthier than the "root beers" and soda water drinks, which are taken so freely as temperance drinks. We speak of their chemical nature. This work treats fully upon all the different processes, and is illustrated with engravings.

Electrotype Manipulation—This is another exceedingly useful little volume, in two parts, published by Mr. Baird, and sold by J. S. Taylor, at the above place, in this city. The author of it is Chas. V. Walker, of London, editor of the "Electrical Magazine," &c. We are well acquainted with this work, and can recommend it to all electricians, amateurs and practitioners. It is illustrated with engravings, and describes the mode of preparing the moulds, gilding, plating, &c., and gives instructions how to manage the batteries.

National Portrait Gallery—Peterson & Co., Philadelphia—The present number of this truly American work contains engravings of Henry Clay, Daniel Webster, and Wm. Wirt, with a biographical account of these distinguished statesmen.. The work will be completed in forty Nos. of which the above is the seventh, and, when entire, will be a valuable addition to American literature The whole arrangement does great credit to its publisher. Wm. Terry, 113 Nassau street, agent for New York.

Graham's Magazine—For November, 1852: Dewitt & Davenport, Tribune Buildings. The present number of this popular periodical is in no way inferior to its predecessors, and contains a vast amount of readable matter in its columns. Among the contributions to its pages we observe articles by Dickens, Mrs. S. C. Hall, and other well-known literary characters. In addition to the wood-cuts that accompany the letter-print, there are two good engravings at the frontispiece.

Meyer's Universum—No. 8 contains the following elegant steel engravings with descriptive text: "Washington's House at Mount Vernon," by Horace Greeley; "Erlangen," Bavaria; "Cape Horn;" "A Masked Ball at the Opera House in Paris." Price 25 cents, or $3 per volume. It is a beautiful number; published semi-monthly by H. S. Meyer, 164 Willam st., N. Y.

Bibliothica Sacra—This distinguished and able Review for October, contains a most able article on the "Vestiges of Culture in the Early Ages," and another one on "Islamism," which have greatly interested us. This is a work in which every American clergyman and christian may feel an honest pride. Its standing is so high abroad, that it is reprinted in Britain. It is published by W. F. Draper, Andover, Mass.

New Jersey Medical Reporter—The October number of this Monthly Magazine, edited by Joseph Parrish, M. D., of Burlington, N. Y., commences a new volume. It is an able and excellent Medical Journal. We derive much information from its columns.

MECHANICS

Manufacturers and Inventors.

A new Volume of the SCIENTIFIC AMERICAN commences about the middle of September in each year. It is a journal of Scientific, Mechanical, and other improvements; the advocate of industry in all its various branches. It is published weekly in a form suitable for binding, and constitutes, at the end of each year, a splendid volume of over 400 pages, with a copious index, and from five to six hundred original engravings, together with a great amount of practical information concerning the progress of invention and discovery throughout the world.

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The Patent Claims are published weekly and are invaluable to Inventors and Patentees.

PRIZES—We solicit attention to the splendid Prizes offered for the largest number of subscribers, consisting of a SILVER PITCHER worth $60; a set of the ICONOGRAPHIC ENCYCLOPEDIA worth $35; DEMPSEY'S MACHINERY OF THE NINETEENTH CENTURY, and C. B. Stuart's great work upon the NAVAL DRY DOCKS OF THE UNITED STATES.

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